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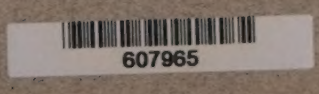
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ACCOUNTS AND PAPERS:

FORTY-THREE VOLUMES.

—(27.)—

SHIPPING.

Session

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FORTY-THREE VOLUMES:—CONTENTS OF THE

TWENTY-SEVENTH VOLUME.

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SHOWING THE

PROGRESS OF BRITISH MERCHANT SHIPPING.

Board of Trade,
21 May 1875.

T. H. FARRER.

(*Mr. Cavendish Bentinck*)

Ordered, by The House of Commons. *to be Printed*,
21 *May* 1875.

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TABLE, No. 1.

UNITED KINGDOM—(Foreign Trade).

Tonnage of Shipping Entered and Cleared in the United Kingdom

(With Cargoes only.)

YEARS.	British (United Kingdom and its Dependencies) Ships.	Foreign Ships.										
		American (U. S.)	Austrian.	Belgian.	Bremen.	Danish.	Dutch.	French.	Hamburg.	Hanoverian.	Mecklenburg.	
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	
1838	4,522,260	725,913	Included in the Column of Other Countries.	86,613	Included in the Column of other Countries.	125,465	93,321	175,341	Included in the Column of Other Countries.			
1839	4,953,547	578,244	- ditto -	94,708	- ditto -	196,791	110,753	239,046	- -	- ditto -	- -	2
1840	5,216,159	829,052	- ditto -	77,015	- ditto -	199,839	115,544	196,677	- -	- ditto -	- -	3
1841	5,525,429	602,610	- ditto -	62,875	- ditto -	178,966	102,347	179,352	- -	- ditto -	- -	4
1842	5,415,821	649,143	- ditto -	88,937	- ditto -	141,523	89,984	132,789	- -	- ditto -	- -	5
1843	5,646,834	740,974	- ditto -	78,453	- ditto -	172,863	95,129	117,636	- -	- ditto -	- -	6
1844	5,691,680	690,802	- ditto -	93,344	- ditto -	230,594	105,518	136,957	- -	- ditto -	- -	7
1845	6,617,110	862,126	- ditto -	82,042	- ditto -	198,918	134,291	193,270	- -	- ditto -	- -	8
1846	6,614,156	836,894	- ditto -	83,006	- ditto -	233,161	116,042	210,913	- -	- ditto -	- -	9
1847	7,444,750	1,154,617	- ditto -	75,935	- ditto -	254,733	131,199	254,436	- -	- ditto -	- -	10
1848	7,574,192	1,149,647	- ditto -	90,072	- ditto -	261,401	163,488	346,999	- -	- ditto -	- -	11
1849	8,152,557	1,196,310	- ditto -	80,642	- ditto -	278,934	177,999	362,504	- -	- ditto -	- -	12
1850	8,039,308	1,215,225	- ditto -	71,775	- ditto -	285,263	240,444	369,624	- -	- ditto -	- -	13
1851	8,535,252	1,567,070	- ditto -	75,250	- ditto -	327,425	280,502	332,868	- -	- ditto -	- -	14
1852	8,727,136	1,685,504	- ditto -	84,304	- ditto -	343,105	331,970	286,040	- -	- ditto -	- -	15
1853	9,064,705	1,863,912	- ditto -	104,381	- ditto -	457,919	463,103	446,681	- -	- ditto -	- -	16
1854	9,473,640	2,236,811	- ditto -	110,781	- ditto -	448,014	426,772	479,653	- -	- ditto -	- -	17
1855*	9,211,008	2,450,998	- ditto -	103,056	- ditto -	432,869	391,033	370,790	- -	- ditto -	- -	18
1856*	10,970,123	2,820,295	60,436	127,288	47,766	453,229	399,796	412,015	208,925	218,600	154,817	19
1857*	11,636,257	2,510,841	208,455	144,985	79,799	559,248	486,809	558,839	249,239	228,298	176,602	20
1858*	11,114,330	2,417,301	287,665	103,369	196,113	537,716	447,699	688,821	254,269	228,362	181,748	21
1859*	11,614,671	2,168,693	205,132	102,231	*See* Hanse Towns	589,017	429,825	584,150	Hanse Towns, 500,492	220,113	Including Oldenburg, 313,496	22
1860	12,119,454	2,734,381	316,511	112,537	- -	618,681	445,556	616,410	502,257	215,971	304,841	23
1861	13,149,545	3,020,069	256,084	117,697	- -	548,449	374,839	631,661	543,613	202,523	306,682	24
1862	13,992,108	2,234,077	242,566	125,387	- -	564,959	441,364	697,629	637,976	232,418	320,021	25
1863	15,263,047	1,342,390	249,515	114,360	- -	599,939	417,732	678,949	684,693	234,332	327,383	26
1864	16,409,413	912,393	203,122	129,866	- -	557,457	384,570	689,114	414,428	158,720	195,700	27
1865	17,413,643	768,020	240,769	199,956	- -	475,138	438,455	730,153	589,482	218,402	336,476	28
1866	19,169,967	944,717	221,659	201,142	- -	496,522	407,142	738,491	703,178	206,154	353,980	29
1867	19,942,872	979,224	203,468	210,003	- -	533,110	347,495	744,715	792,486	117,369	344,653	30
1868	20,474,621	1,021,746	212,164	249,683	- -	582,841	377,682	693,072	946,240	78,498	307,908	31
1869	21,355,939	845,505	372,786	275,727	- -	566,620	355,045	664,587	827,591	79,263	293,477	32
1870	22,243,039	1,134,215	356,701	305,384	- -	623,798	436,214	785,658	512,826	62,108	119,322	33
1871	24,646,703	1,425,873	303,933	350,385	*See* German	568,242	362,625	831,782	- -	*See* German	- -	34
1872	25,714,276	846,559	397,007	369,806	- -	746,172	430,929	991,296	- -	- -	- -	35
1873	26,127,942	940,772	393,116	397,453	- -	745,905	429,401	937,676	- -	- -	- -	36

* "Transports" with troops and Government stores not included.

TABLE, No. 1.

UNITED KINGDOM (Foreign Trade).

from 1838 to 1873, analysed according to the several National Flags.

(With Cargoes only.)

	FOREIGN SHIPS.								Gross Total.	Per-Centages.		YEARS.
	Norwegian.	Prussian.	Russian.	Sardinian.	Spanish.	Swedish.	Of other Countries.	Total Foreign.		British Ships.	Total Foreign Ships.	
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*			
1	157,251	246,139	101,847	Included in the Column of Other Countries.	11,803	35,752	135,851	1,895,296	6,417,556	70·5	29·5	1838
2	159,217	320,775	109,840	- ditto -	13,953	45,544	220,802	2,089,673	7,043,220	70·3	29·7	1839
3	169,842	312,878	105,348	- ditto -	15,228	52,563	207,688	2,281,674	7,497,833	69·6	30·4	1840
4	162,307	314,971	106,036	- ditto -	13,417	50,963	226,312	2,000,156	7,525,585	73·4	26·6	1841
5	138,358	247,348	103,518	- ditto -	20,044	59,276	260,063	1,930,983	7,346,804	73·7	26·3	1842
6	150,212	312,392	84,787	- ditto -	17,658	63,331	198,522	2,031,957	7,678,791	73·5	26·5	1843
7	193,908	353,215	90,698	- ditto -	22,811	69,306	232,567	2,219,720	7,911,400	71·9	28·1	1844
8	241,014	425,639	129,885	- ditto -	26,013	85,726	336,751	2,715,675	9,332,785	70·9	29·1	1845
9	299,463	508,530	115,648	- ditto -	38,852	81,803	441,428	2,875,740	9,589,896	70·9	30·0	1846
10	272,730	434,627	123,020	- ditto -	47,677	114,446	502,123	3,365,543	10,810,293	68·9	31·1	1847
11	262,609	213,653	128,885	- ditto -	29,024	100,767	309,961	3,056,506	10,630,698	71·2	28·8	1848
12	240,016	246,277	137,641	- ditto -	36,709	98,325	493,263	3,348,620	11,501,177	70·9	29·1	1849
13	331,664	404,401	163,254	- ditto -	46,328	125,649	727,739	3,981,366	12,020,674	66·9	33·1	1850
14	455,394	510,408	208,847	- ditto -	54,783	165,703	957,875	4,936,125	13,471,377	63·4	36·6	1851
15	473,926	471,201	176,258	- ditto -	56,093	173,924	793,289	4,875,614	13,602,750	64·2	35·8	1852
16	649,166	659,064	216,678	- ditto -	104,104	258,144	1,093,304	6,316,456	15,381,161	58·9	41·1	1853
17	653,830	617,296	33,062	- ditto -	114,429	239,700	936,290	6,296,638	15,770,278	60·1	39·9	1854
18	672,667	567,398	- -	- ditto -	88,609	205,334	873,370	6,156,124	15,367,132	59·9	40·1	1855
19	808,144	622,526	48,016	33,590	93,452	223,596	200,384	6,932,875	17,902,998	61·3	38·7	1856
20	781,270	672,754	85,970	81,405	129,061	231,024	250,523	7,435,122	19,071,379	61·0	39·0	1857
21	748,186	646,560	141,069	104,959	126,415	259,835	275,544	7,645,631	18,759,961	59·2	40·8	1858
22	921,293	734,503	213,313	100,133	143,336	309,153	185,055	7,719,935	19,334,606	60·1	39·9	1859
23	948,212	774,678	242,673	176,098	128,181	366,700	214,777	8,718,464	20,837,918	58·2	41·8	1860
24	946,499	748,617	248,242	141,447	162,557	323,701	202,758	8,775,438	21,924,983	60·0	40·0	1861
25	992,817	811,876	261,445	188,170	200,771	325,451	181,622	8,458,549	22,450,657	62·3	37·7	1862
26	1,088,400	826,381	269,593	221,876	206,375	340,586	159,612	7,762,116	23,025,163	66·3	33·7	1863
27	1,305,936	553,177	403,600	282,208	219,873	384,523	210,784	7,065,471	23,474,884	69·9	30·1	1864
28	1,257,260	807,444	330,669	335,920	206,124	342,737	295,197	7,572,202	24,985,845	69·7	30·3	1865
29	1,382,748	826,542	331,500	391,581	198,714	407,427	305,820	8,117,317	27,287,284	70·3	29·7	1866
30	1,455,638	914,398	361,322	324,300	264,025	405,856	248,095	8,246,157	28,189,029	70·7	29·3	1867
31	1,539,144	1,112,107	360,230	391,004	289,645	427,411	260,680	8,850,055	29,324,676	69·8	30·2	1868
32	1,661,229	1,044,044	442,238	592,262	314,901	460,160	252,310	9,047,745	30,403,684	70·2	29·8	1869
33	1,975,575	676,993	538,443	700,798	293,800	591,985	267,821	9,381,641	31,624,680	70·3	29·7	1870
34	2,127,518	German 2,412,319	523,981	Italian 866,746	332,140	637,958	112,592	10,856,094	35,502,797	69·4	30·6	1871
35	2,195,282	2,648,794	570,572	986,859	404,875	732,197	119,668	11,440,016	37,154,292	69·2	30·8	1872
36	2,361,990	2,656,099	521,789	844,065	481,843	912,236	184,141	11,806,480	37,934,422	68·9	31·1	1873

TABLE, No. 2.

Principal Maritime Countries—(Foreign Trade).

Tonnage of Shipping Entered and Cleared in the United Kingdom, *United States*, *France*, *Holland*,

(With Cargoes and in Ballast.)

YEARS.	UNITED KINGDOM.			*UNITED STATES.			FRANCE.		
	British Tonnage.	Foreign Tonnage.	Total Tonnage.	United States Tonnage.	Foreign Tonnage.	Total Tonnage.	French Tonnage.	Foreign Tonnage.	Total Tonnage.
1850	9,442,544 *65·1* p' cent.	5,062,520 *34·9* p' cent.	14,505,064	5,205,804 *59·8* p' cent.	3,503,837 *40·2* p' cent.	8,709,641	1,891,512 *41* p' cent.	2,719,207 *59* p' cent.	4,610,719
1851	9,820,876	6,159,322	15,980,198	6,254,868	3,868,626	10,123,494	1,974,968	3,012,695	4,987,663
1852	9,985,969	6,144,180	16,130,149	6,466,112	4,104,933	10,571,045	2,054,630	3,286,642	5,341,272
1853	10,268,323	8,121,887	18,390,210	7,770,802	4,576,720	12,347,522	2,313,700	3,560,256	5,873,956
1854	10,744,849	7,924,238	18,669,087	7,663,507	4,240,026	11,903,533	2,535,683	3,513,913	6,049,596
1855	10,919,732	7,569,738	18,489,470	7,930,370	4,194,270	12,124,640	2,697,901	4,393,252	7,091,153
1856	12,945,771	8,643,278	21,589,049	8,923,848	4,948,878	13,872,726	3,107,539	5,426,976	8,534,515
1857	13,694,107	9,484,685	23,178,792	9,302,021	4,955,116	14,257,137	3,491,815	5,200,420	8,692,235
1858	12,891,405	9,418,576	22,309,981	8,885,670	4,522,162	13,407,837	3,379,737	4,791,528	8,171,265
1859	13,311,843	9,592,416	22,904,259	10,563,015	5,158,775	15,721,790	3,517,514	5,176,311	8,693,825
1860	13,914,923 *56·3* p' cent.	10,774,369 *43·7* p' cent.	24,689,292	12,087,209 *70·8* p' cent.	4,977,916 *29·2* p' cent.	17,065,125	3,502,912 *41·4* p' cent.	4,953,824 *58·6* p' cent.	8,456,736
1861	15,420,532	11,175,109	26,595,641	9,913,230	4,479,596	14,392,826	3,690,753	6,493,177	10,173,930
1862	15,946,860	10,588,579	26,535,439	10,079,503	4,622,277	14,701,780	3,956,400	5,633,057	9,589,457
1863	17,019,392	9,719,341	26,738,733	9,061,959	5,704,401	14,766,360	4,049,388	5,615,116	9,664,524
1864	18,201,675	9,002,834	27,204,509	6,157,382	7,212,350	13,369,732	4,090,465	5,722,916	9,813,381
1865	19,358,955	9,538,137	28,897,092	5,968,795	6,812,090	12,780,885	4,178,314	6,332,288	10,510,602
1866	21,255,726	10,006,724	31,262,450	6,755,236	8,848,808	15,604,044	4,293,732	7,241,203	11,534,935
1867	22,370,070	10,386,042	32,756,112	6,874,554	8,784,163	15,658,717	4,773,275	8,427,596	13,200,871
1868	22,660,424	11,020,555	33,680,979	7,268,506	9,025,525	16,325,031	4,788,304	8,865,971	13,654,275
1869	23,789,167	11,121,114	34,910,281	6,784,031	10,720,264	17,504,295	4,760,631	8,956,479	13,717,110
1870	25,072,180 *68·4* p' cent.	11,568,002 *31·6* p' cent.	36,640,182	6,992,967 *38·2* p' cent.	11,332,095 *61·8* p' cent.	18,325,062	4,289,206 *31·5* p' cent.	9,317,531 *68·5* p' cent.	13,606,737
1871	28,034,748	13,513,130	41,547,878	7,489,685	12,417,981	19,907,666	4,207,951	9,338,159	15,546,110
1872	28,719,090	13,781,935	42,501,025	7,394,155	14,146,002	21,540,157	4,999,714	9,598,074	14,597,788
1873	29,647,344 *66·7* p' cent.	14,792,642 *33·3* p'cent.	44,439,986	7,369,195 *31·3* p'cent.	16,148,219 *68·7* p'cent.	23,517,413	5,161,226 *32·7* p' cent.	10,580,063 *67·3* p' cent.	15,741,289

* Year ended 30th June.

TABLE, No. 2.

Principal Maritime Countries—(Foreign Trade).

Norway, *Prussia*, and *Sweden*, distinguishing between National and Foreign Ships, from 1850 to 1873.

(With Cargoes and in Ballast.)

	HOLLAND.			NORWAY.			PRUSSIA.			SWEDEN.			Years.
	Dutch Tonnage.	Foreign Tonnage.	Total Tonnage.	Norwegian Tonnage.	Foreign Tonnage.	Total Tonnage.	Prussian Tonnage.	Foreign Tonnage.	Total Tonnage.	Swedish Tonnage.	Foreign Tonnage.	Total Tonnage.	
1	935,283 *41·8* p' ct.	1,301,152 *58·2* p' ct.	2,236,435	1,050,307 *75·2* p' ct.	346,639 *24·8* p' ct.	1,396,945	1,026,378 *49·1* p' ct.	1,063,980 *50·9* p' ct.	2,090,358	462,884 *43·4* p' ct.	604,002 *56·6* p' ct.	1,066,886	1850
2	990,725	1,390,167	2,380,892	1,155,777	403,916	1,559,693	1,080,502	1,152,824	2,233,326	522,910	765,638	1,288,548	1851
3	1,061,342	1,505,811	2,567,153	1,186,398	371,024	1,557,422	993,140	884,814	1,877,954	540,612	832,060	1,372,672	1852
4	1,019,154	1,347,101	2,366,255	1,185,030	418,858	1,603,888	1,273,896	1,176,516	2,450,412	540,874	780,408	1,321,282	1853
5	1,139,277	1,389,124	2,528,401	1,345,964	399,110	1,745,074	1,291,452	1,435,878	2,727,330	732,444	949,122	1,681,566	1854
6	1,208,501	1,619,712	2,828,213	1,263,398	450,662	1,714,060	1,327,860	1,550,654	2,878,514	709,496	1,078,636	1,788,132	1855
7	1,290,730	1,753,657	3,044,387	1,438,179	459,845	1,898,024	1,358,350	1,353,816	2,712,166	733,136	1,117,646	1,850,782	1856
8	1,365,889	1,932,710	3,298,599	1,515,343	460,942	1,976,285	1,499,560	1,649,446	3,149,006	703,066	1,221,848	1,924,914	1857
9	1,297,674	2,086,775	3,384,449	1,537,587	382,258	1,919,845	1,483,800	1,387,342	2,871,142	430,145 (with cargoes only.)†	658,420	1,088,565	1858
10	1,168,943	1,857,436	3,026,379	1,540,576	472,665	2,013,241	1,576,842	1,309,282	2,886,124	522,493	804,107	1,326,600	1859
11	1,341,711 *39·5* p' ct.	2,053,269 *60·5* p' ct.	3,394,980	1,513,369 *74·5* p' ct.	516,667 *25·5* p' ct.	2,030,036	1,711,442 *51·9* p' ct.	1,588,382 *48·1* p' ct.	3,299,824	560,066 *40·3* p' ct.	828,386 *59·7* p' ct.	1,388,452	1860
12	1,365,721	2,152,019	3,517,740	1,760,363	578,161	2,338,524	1,990,538	1,791,712	3,782,250	539,053	976,330	1,515,383	1861
13	1,311,621	2,285,285	3,596,906	1,685,920	599,161	2,285,081	1,951,602	1,941,552	3,893,154	528,193	1,031,420	1,559,613	1862
14	1,280,179	2,122,449	3,402,628	1,735,574	673,560	2,409,134	1,862,308	1,846,924	3,709,232	564,173	1,120,809	1,684,982	1863
15	1,411,643	2,227,707	3,639,350	1,830,129	713,844	2,543,973	912,108	1,760,794	2,672,902	586,451	1,058,669	1,645,120	1864
16	1,327,519	2,545,044	3,872,563	2,021,762	755,964	2,777,726	1,693,956	1,705,296	3,399,252	612,059	1,361,153	1,973,212	1865
17	1,205,486	2,657,704	3,863,190	2,109,670	814,290	2,923,960	1,545,858	1,683,670	3,229,528	1,005,596 (with cargoes and in ballast.)	2,266,424	3,272,020	1866
18	1,225,094	2,936,208	4,161,302	2,064,670	828,477	2,893,147	2,148,292	1,890,066	4,038,358	1,118,370	2,516,196	3,624,566	1867
19	1,275,596	2,890,499	4,166,095	2,181,810	860,023	3,041,833	No Returns			1,256,713	2,717,808	3,974,521	1868
20	1,266,724	3,160,010	4,426,734	2,182,782	905,007	3,087,789	3,460,650	3,337,246	6,797,896	1,295,401	2,709,194	4,004,595	1869
21	1,323,475 *28·4* p' ct.	3,341,448 *71·6* p' ct.	4,664,923	2,264,333 *70·* p' ct.	967,753 *30·* p' ct.	3,231,986	3,301,530 *46·7* p' ct.	2,893,214 *53·3* p' ct.	6,195,744	1,374,433 *31·8* p' ct.	2,954,151 *68·2* p' ct.	4,328,584	1870
22	1,463,477	4,213,561	5,677,038	2,373,203 *71·7* p' ct.	938,126 *28·3* p' ct.	3,311,330	4,050,544 *47·6* p' ct.	4,466,030 *52·4* p' ct.	8,516,574	1,468,479	3,053,836	4,522,315	1871
23	1,526,022 *27·6* p' ct.	4,009,131 *72·4* p' ct.	5,535,153	2,426,052 *68·1* p' ct.	1,134,423 *31·9* p' ct.	3,560,476	—	—	—	1,613,862 *31·8* p' ct.	3,466,209 *68·2* p' ct.	5,080,071	1872
24	—	—	—	—	—	—	—	—	—	—	—	—	1873

† The Shipping Returns of Sweden give the Tonnage entered and cleared *with cargoes* only from 1858 to 1866.

TABLE, No. 3.

UNITED KINGDOM—(FOREIGN TRADE).

NUMBER and Tonnage of BRITISH and FOREIGN VESSELS, entered with CARGOES from Foreign Countries

1 8 5 4.

COUNTRIES WHENCE ARRIVED.	BRITISH.						FOREIGN.					
	Sailing Vessels.		Steam Vessels.		TOTAL.		Sailing Vessels.		Steam Vessels.		TOTAL.	
FOREIGN:	*No.*	*Tons.*	*No.*	*Tons.*	*No.*	*Tons.*	*No.*	*Tons.*	*No.*	*Tons.*	*No.*	*Tons.*
Russia	230	68,987	–	–	230	68,987	622	124,134	–	–	622	124,134
Sweden	204	36,100	49	15,251	253	51,351	1,274	226,626	1	117	1,275	226,743
Norway	76	10,632	27	7,392	103	18,024	1,725	259,430	–	–	1,725	259,430
Denmark	62	5,714	96	37,887	158	43,601	2,003	141,252	24	6,552	2,027	147,804
Prussia	785	138,814	34	13,942	819	152,756	2,289	377,502	14	6,914	2,303	384,416
Mecklenburg	8	735	–	–	8	735	197	25,845	4	639	201	26,484
Hanover	49	4,307	–	–	49	4,307	401	22,119	–	–	401	22,119
Oldenburg	5	383	–	–	5	383	100	5,282	2	506	102	5,788
Hanse Towns	195	22,462	599	212,678	794	235,140	502	41,586	104	40,039	606	81,625
Holland	455	37,985	927	275,565	1,382	313,550	532	51,104	238	45,942	770	97,046
Java	15	6,166	–	–	15	6,166	9	4,270	–	–	9	4,270
Belgium	260	20,721	329	97,760	589	118,481	284	32,153	127	30,748	411	62,901
France	970	71,647	1,498	281,274	2,468	352,921	1,093	78,022	35	5,201	1,128	83,223
Algeria	16	2,625	–	–	16	2,625	21	3,180	–	–	21	3,180
Isle of Bourbon	1	220	–	–	1	220	—	—	—	—	—	—
Portugal, Azores, and Madeira	725	71,929	52	16,883	777	88,812	241	27,379	–	–	241	27,379
Cape Verde Islands	3	464	–	–	3	464	—	—	—	—	—	—
Spain and Canaries	585	61,422	14	5,354	599	66,776	376	41,688	15	3,424	391	45,112
Cuba and Porto Rico	217	64,006	2	647	219	64,653	269	79,740	–	–	269	79,740
Phillippine Islands	22	11,472	–	–	22	11,472	5	2,795	–	–	5	2,795
Fernando Po	7	3,987	7	2,833	14	6,820	—	—	—	—	—	—
Italy	496	73,471	41	19,101	537	92,572	184	33,913	–	–	184	33,913
Austria	57	13,722	–	–	57	13,722	76	20,362	–	–	76	20,362
Greece	45	6,871	–	–	45	6,871	10	1,749	–	–	10	1,749
Turkey	287	58,299	57	40,479	344	98,778	62	14,427	1	350	63	14,777
Wallachia and Moldavia	68	10,991	–	–	68	10,991	74	10,724	–	–	74	10,724
Syria and Palestine	16	3,288	1	394	17	3,682	4	1,011	–	–	4	1,041
Egypt	228	62,680	39	32,979	267	95,659	131	36,783	–	–	131	36,783
Tunis	–	–	–	–	–	–	1	164	–	–	1	164
Morocco	85	9,544	–	–	85	9,544	24	3,359	–	–	24	3,359
United States	426	275,159	86	89,293	512	364,452	964	893,549	23	32,955	917	926,504
Mexico	13	3,783	–	–	13	3,783	8	2,577	–	–	8	2,577
Central America	38	8,033	–	–	38	8,033	8	1,657	–	–	8	1,657
Hayti	29	6,164	–	–	29	6,164	16	3,241	–	–	16	3,241
Foreign West Indies (except Hayti, Cuba, and Porto Rico separately specified)	17	2,846	26	43,895	43	46,741	9	1,871	–	–	9	1,871
New Granada	32	7,270	–	–	32	7,270	8	1,824	–	–	8	1,824
Venezuela	6	1,314	–	–	6	1,314	7	1,362	–	–	7	1,362
Brazil	199	54,785	23	22,330	222	77,115	50	8,674	–	–	50	8,674
Monte Video	15	3,185	1	673	16	3,858	24	5,233	–	–	24	5,233
Buenos Ayres	71	16,504	–	–	71	16,504	51	10,463	–	–	51	10,463
Patagonia	1	368	–	–	1	368	—	—	—	—	—	—
Chili	77	25,798	–	–	77	25,798	6	2,187	–	–	6	2,187
Peru	349	180,398	–	–	349	180,398	28	9,912	–	–	28	9,912
Ecuador	2	464	–	–	2	464	—	—	—	—	—	—
China (exclusive of Hong Kong)	101	52,713	–	–	101	52,713	31	24,719	–	–	31	24,719
Western Coast of Africa	114	34,377	–	–	114	34,377	14	2,481	–	–	14	2,181
Whale Fisheries	51	14,347	–	–	51	14,347	—	—	—	—	—	—
TOTAL FROM FOREIGN COUNTRIES	7,713	1,567,152	3,908	1,216,610	11,621	2,783,762	13,733	2,636,049	588	173,387	14,321	2,809,436
BRITISH POSSESSIONS:												
Channel Islands	1,293	101,557	328	55,679	1,621	157,236	2	226	–	–	2	226
Gibraltar	13	1,129	36	14,827	49	15,956	1	87	–	–	1	87
Malta	26	4,864	–	–	26	4,864	7	2,241	–	–	7	2,241
Ionian Islands	29	4,270	–	–	29	4,270	—	—	—	—	—	—
North American Provinces	2,375	1,001,640	12	11,385	2,387	1,013,025	424	248,771	–	–	424	248,771
West Indies	845	237,763	–	–	845	237,763	59	17,229	–	–	59	17,229
Australia and New Zealand	170	109,967	6	6,465	176	116,432	1	1,700	–	–	1	1,700
Hong Kong	3	1,652	–	–	3	1,652	—	—	—	—	—	—
East Indies and Singapore	521	319,892	8	9,335	529	329,227	48	27,020	–	–	48	27,020
Ceylon	72	31,084	–	–	72	31,084	1	438	–	–	1	438
Mauritius	194	66,008	–	–	194	66,008	3	1,322	–	–	3	1,322
Cape of Good Hope	46	12,704	–	–	46	12,704	5	1,286	–	–	5	1,286
West Coast of Africa	50	14,202	3	912	53	15,114	—	—	—	—	—	—
St. Helena and Ascension	2	190	–	–	2	190	—	—	—	—	—	—
Falkland Islands	3	699	–	–	3	699	—	—	—	—	—	—
TOTAL FROM BRITISH POSSESSIONS	5,642	1,907,621	393	98,603	6,035	2,006,224	551	300,320	–	—	551	300,320
TOTAL FROM FOREIGN COUNTRIES AND BRITISH POSSESSIONS	13,355	3,474,773	4,301	1,315,213	17,656	4,789,986	14,284	2,936,369	588	173,387	14,872	3,109,756

TABLE No. 3.

UNITED KINGDOM—(FOREIGN TRADE).

and British Possessions, at Ports in the United Kingdom, in the Years 1854 and 1873 respectively.

1873.

COUNTRIES WHENCE ARRIVED.	BRITISH.						FOREIGN.					
	Sailing Vessels.		Steam Vessels.		TOTAL.		Sailing Vessels.		Steam Vessels.		TOTAL.	
FOREIGN:	*No.*	*Tons.*	*No.*	*Tons.*	*No.*	*Tons.*	*No.*	*Tons.*	*No.*	*Tons.*	*No.*	*Tons.*
Russia	1,057	254,204	904	657,541	1,961	911,745	2,250	584,064	151	104,827	2,401	688,891
Sweden	475	103,936	179	120,079	654	224,015	3,457	783,043	296	134,481	3,753	917,524
Norway	353	47,060	175	93,932	528	140,992	3,817	679,907	106	33,513	3,923	713,420
Denmark and Possessions	33	3,887	131	104,317	164	108,204	761	68,229	112	63,716	873	131,945
Germany	660	84,628	1,401	730,338	2,061	814,966	1,607	312,295	671	522,417	2,278	834,712
Holland and Possessions	435	64,479	1,768	667,651	2,203	732,130	495	45,944	271	92,561	766	138,505
Belgium	460	52,868	1,493	548,219	1,953	601,087	201	35,157	725	186,706	926	221,863
France and Possessions	2,774	255,661	4,556	1,062,697	7,330	1,318,358	2,904	292,931	264	107,626	3,168	400,557
Portugal and Possessions	550	91,184	384	187,473	934	278,657	74	13,027	30	17,841	104	30,868
Spain and Possessions	1,473	296,304	845	428,727	2,318	725,031	1,064	288,763	268	134,141	1,332	422,904
Italy	226	43,361	204	144,129	430	187,490	121	34,328	6	2,606	127	36,934
Austrian Territories	6	1,048	17	17,059	23	18,107	15	6,150	3	1,723	18	7,873
Greece	63	15,306	90	90,126	153	105,432	13	2,912	1	487	14	3,399
Turkey (European and Asiatic)	202	54,883	246	187,690	449	242,573	204	71,587	6	5,006	210	76,593
Egypt	131	44,416	222	277,133	353	321,549	111	45,146	2	1,928	113	47,074
Tripoli and Tunis	35	16,389	1	748	36	17,137	9	3,549	–	–	9	3,549
Morocco	281	44,089	8	3,358	289	47,447	87	12,147	–	–	87	12,147
United States	1,177	777,075	755	1,316,279	1,932	2,093,354	1,415	831,223	64	95,517	1,479	926,740
Mexico	23	6,296	1	1,374	24	7,670	79	20,637	1	1,279	80	21,916
Central America	17	9,335	–	–	17	9,335	17	6,367	–	–	17	6,367
Hayti	20	6,300	9	11,437	29	17,737	21	4,591	–	–	21	4,591
New Granada	8	2,014	4	4,782	12	6,796	11	2,217	–	–	11	2,217
Venezuela	3	750	2	2,194	5	2,944	13	2,328	–	–	13	2,328
Brazil	270	73,392	102	102,100	372	175,492	211	54,052	–	–	211	54,052
Monte Video	32	9,003	2	1,897	34	10,900	58	18,185	–	–	58	18,185
Buenos Ayres	36	9,675	58	61,424	94	71,099	97	31,341	–	–	97	31,341
Paraguay	–	–	–	–	–	–	1	177	–	–	1	177
Patagonia	1	334	–	–	1	334	6	1,420	–	–	6	1,420
Chili	149	74,744	2	3,297	151	78,041	9	5,120	1	884	10	6,004
Bolivia	28	16,264	–	–	28	16,264	11	10,346	–	–	11	10,346
Peru	163	118,660	47	101,131	210	219,791	67	53,734	–	–	67	53,734
Ecuador	2	660	–	–	2	660	4	956	–	–	4	956
China (exclusive of Hong Kong and Macao)	46	36,752	60	85,820	106	122,572	1	430	4	4,098	5	4,528
Japan	13	7,063	2	2,810	15	9,873	3	1,242	2	1,635	5	2,877
Borneo and other Islands in the Indian Seas	4	1,794	–	–	4	1,794	—	—	—	—	—	—
Cochin China	1	302	–	–	1	302	1	1,215	–	–	1	1,215
Siam	1	494	–	–	1	494	2	700	–	–	2	700
Persia	–	–	1	918	1	918	—	—	—	—	—	—
Eastern Coast of Africa (Native States)	1	1,276	–	–	1	1,276	—	—	—	—	—	—
Western Coast of Africa (not particularly designated)	63	16,148	55	47,704	118	63,852	13	2,991	–	–	13	2,991
Islands in the Pacific	3	2,277	–	–	3	2,277	4	2,308	–	–	4	2,308
Whale Fisheries	5	1,033	25	8,479	30	9,512	—	—	—	—	—	—
TOTAL OF FOREIGN COUNTRIES	11,281	2,645,344	13,749	7,072,863	25,030	9,718,207	19,234	4,330,759	2,984	1,512,992	22,218	5,843,751
BRITISH POSSESSIONS:												
Channel Islands	993	123,705	496	110,516	1,489	234,221	5	389	9	1,755	14	2,144
Gibraltar	6	963	22	15,367	28	16,330	—	—	—	—	—	—
Malta and Gozo	16	7,339	8	7,378	24	14,717	1	64	–	–	1	64
North American Provinces	1,293	788,019	188	231,984	1,481	1,020,003	579	314,861	–	–	579	314,861
Bermudas	1	267	–	–	1	267	—	—	—	—	—	—
British West Indies	484	160,673	15	16,100	499	176,773	71	21,909	11	16,116	82	38,025
British Guiana	119	44,635	12	14,918	131	59,553	14	3,652	–	–	14	3,652
Belize (British Honduras)	18	7,842	–	–	18	7,842	15	5,957	–	–	15	5,957
Australia	278	247,178	6	8,479	284	255,657	13	8,519	–	–	13	8,519
Hong Kong	7	4,071	3	3,260	10	7,331	1	200	–	–	1	200
India	490	503,719	207	270,300	697	774,019	91	65,424	8	6,681	99	72,105
Singapore	55	28,737	8	6,561	63	35,298	24	14,237	1	864	25	15,101
Ceylon	55	32,300	11	10,636	66	42,936	5	3,509	2	1,993	7	5,502
Mauritius	65	28,190	–	–	65	28,190	9	3,998	–	–	9	3,998
Cape of Good Hope	53	15,497	42	51,194	95	66,691	6	1,574	–	–	6	1,574
Natal	22	5,435	3	3,624	25	9,059	15	3,593	–	–	15	3,593
River Gambia	6	1,313	–	–	6	1,313	—	—	—	—	—	—
Sierra Leone	3	506	–	–	3	506	—	—	—	—	—	—
Gold Coast	13	2,292	2	1,198	15	3,490	4	854	–	–	4	854
St. Helena	6	1,727	–	–	6	1,727	1	245	–	–	1	245
Falkland Islands	2	782	–	–	2	782	—	—	—	—	—	—
TOTAL OF BRITISH POSSESSIONS	3,985	2,005,190	1,023	751,515	5,008	2,756,705	854	448,985	31	27,409	885	476,394
TOTAL OF FOREIGN COUNTRIES AND BRITISH POSSESSIONS	15,266	4,650,534	14,772	7,824,378	30,038	12,474,912	20,088	4,779,744	3,015	1,540,401	23,103	6,320,145

TABLE, No. 4.

United Kingdom (Foreign Trade in Steam Vessels).

Steam Tonnage Entered and Cleared in the *United Kingdom*, distinguishing *British, United States, French, Dutch, Norwegian,* &c., from 1848 to 1873.
(With Cargoes and in Ballast).

Years.	British Steam Ships.	Foreign Steam Ships.							Total.
		United States.	France.	Holland	Norway.	Hanse Towns.	Other Countries.	Total Foreign.	
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1848	1,340,151	29,752	85,257	19,724	- -	Not distinguished till 1856.	122,496	257,229	1,597,380
1849	1,428,807	27,850	89,829	32,173	- -		158,333	308,185	1,736,992
1850	1,802,955	55,656	98,236	50,546	- -		202,454	406,892	2,209,847
1851	1,895,076	98,033	298	63,299	- -		170,064	331,694	2,226,770
1852	1,980,473	94,879	1,253	73,169	- -		179,999	349,300	2,329,773
1853	2,266,850	98,017	3,052	77,000	145		141,321	319,535	2,586,385
1854	2,662,191	95,242	11,839	90,087	- -		160,653	357,821	3,020,012
1855	2,532,977*	107,270	6,952	111,512	1,776		152,254	379,764	2,912,741
1856	3,290,619*	102,663	26,875	146,431	15,420	115,302	198,865	605,556	3,896,175
1857	3,888,247*	103,605	43,492	164,289	17,671	173,255	276,813	779,125	4,667,372
1858	3,701,675*	44,002	42,894	162,862	18,598	293,711	241,910	803,977	4,505,652
1859	3,930,127*	5,720	24,371	139,095	19,421	341,813	253,126	783,546	4,713,673
1860	4,186,620	8,809	44,025	123,242	18,115	338,809	247,853	780,853	4,967,473
1861	4,660,744	18,674	62,435	130,902	13,354	339,975	248,103	813,443	5,474,187
1862	5,239,493	1,067	98,665	138,372	13,595	400,497	314,711	966,907	6,206,400
1863	5,783,350	38	81,375	141,372	13,463	453,395	319,540	1,009,183	6,792,533
1864	6,667,094	2,339	108,859	148,503	13,417	226,050	432,763	931,931	7,599,025
1865	7,865,417	1,059	136,652	162,175	13,198	407,203	417,138	1,137,425	9,002,842
1866	9,484,594	30,172	123,342	124,321	14,259	520,660	464,065	1,276,819	10,761,413
1867	10,511,903	38,032	183,405	90,214	1,848	639,006	552,045	1,504,550	12,016,453
1868	10,892,205	8,904	242,762	102,802	5,006	811,466	611,412	1,782,352	12,674,557
1869	12,227,965	2,667	251,985	123,708	14,018	737,112	727,599	1,857,089	14,085,054
1870	13,341,058	4,852	296,346	165,490	28,517	416,777	819,291	1,731,273	15,072,331
1871	15,361,202	14,029	327,527	135,548	58,440	*German.* 976,902	968,044	2,480,490	17,841,692
1872	17,410,029	- -	375,620	191,270	86,771	1,161,099	1,188,943	3,003,703	20,413,732
1873	18,943,653	47,269	440,402	214,407	138,219	1,448,096	1,530,244	3,818,637	22,762,290

* "Transports," with troops and Government stores, are not included in the Returns of the United Kingdom.

TABLE, No. 5.

Principal Maritime Countries—(Merchant Navies).

Aggregate Tonnage of the Merchant Navies of the *British Empire, United States, France, Holland,* and *Norway,* from 1815 to 1873, or for as many Years as can be given.

YEARS.	British Empire, including United Kingdom.	United States. Registered for Oversea Foreign Trade.	United States. *Enrolled for Home Trade, including Lake and River Steamers.	France.	Holland.	Norway.	Hamburg.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1815	2,681,276	—	—	—	—	—	—
1816	2,783,933	—	—	—	—	—	—
1817	2,664,986	—	—	—	—	—	—
1818	2,674,468	—	—	—	—	—	—
1819	2,666,396	—	—	—	—	—	—
1820	2,648,593	—	—	—	—	—	—
1821	2,560,203	619,896	612,712	—	—	—	—
1822	2,519,044	628,150	634,619	—	—	—	—
1823	2,506,760	639,921	634,035	—	—	—	—
1824	2,559,587	669,973	657,642	—	—	—	—
1825	2,553,682	700,787	657,899	—	—	—	—
1826	2,635,644	737,978	730,172	—	—	—	—
1827	2,460,500	747,170	806,986	—	—	—	—
1828	2,518,191	812,619	862,171	—	—	—	—
1829	2,517,000	650,143	588,357	—	—	—	—
1830	2,531,819	576,475	591,447	—	—	—	—
1831	2,581,964	620,452	620,017	—	—	—	—
1832	2,618,068	686,990	723,689	—	—	—	—
1833	2,634,577	750,027	825,196	—	—	—	—
1834	2,716,100	857,438	869,382	—	—	—	—
1835	2,783,761	805,822	906,612	—	—	—	—
1836	2,792,646	897,775	952,527	—	—	—	—
1837	2,791,018	810,447	1,051,011	696,978	—	—	—
1838	2,890,601	822,592	1,133,999	679,863	—	—	—
1839	3,068,433	834,245	1,221,902	673,308	—	—	—
1840	3,311,538	899,765	1,240,860	662,500	—	—	—
1841	3,512,480	945,803	1,147,913	590,262	—	—	—
1842	3,619,850	975,359	1,084,669	589,517	—	—	—
1843	3,588,387	1,009,305	1,115,028	599,707	—	—	—
1844	3,637,231	1,068,765	1,173,538	604,637	—	—	—
1845	3,714,061	1,095,172	1,282,344	611,492	—	—	—
1846	3,817,112	1,130,287	1,399,290	633,359	—	—	—
1847	3,952,524	1,241,313	1,554,252	670,260	—	—	—
1848	4,052,160	1,360,887	1,747,632	683,298	—	—	—
1849	4,144,115	1,438,942	1,848,235	680,565	—	—	—
1850	4,232,962	1,585,711	1,899,555	688,153	396,124	298,315	—
1851	4,332,085	1,726,307	1,992,333	704,036	421,506	311,440	—
1852	4,424,362	1,899,448	2,183,226	721,384	448,864	336,172	—
1853	4,764,422	2,103,674	2,242,622	762,415	479,202	358,129	—
1854	†5,115,846	2,333,819	2,411,135	819,762	519,016	394,212	—
1855	5,250,553	2,535,136	2,615,731	872,156	551,854	402,242	—
1856	5,312,436	2,491,403	2,337,886	998,996	593,384	479,203	—
1857	5,531,887	2,463,968	2,438,370	1,052,535	621,102	521,278	—
1858	5,609,623	2,499,742	2,502,086	1,049,844	621,306	540,210	—
1859	5,660,402	2,507,402	2,586,967	1,025,942	611,350	552,386	—
1860	5,710,968	2,546,237	2,752,938	996,124	588,772	558,927	142,416
1861	5,895,369	2,642,628	2,839,399	983,996	572,434	579,761	147,152
1862	6,041,358	2,291,251	2,772,005	982,571	554,244	595,131	156,091
1863	6,624,403	2,026,114	3,076,193	985,235	539,844	633,733	179,824
1864	7,103,261	1,581,894	3,352,471	998,519	542,952	666,655	178,605
1865	7,322,604	‡1,602,583	3,454,093	1,008,084	538,676	741,193	188,347
1866	7,297,984	‡1,492,926	2,778,537	1,042,811	540,084	835,670	181,883
1867	7,232,671	‡1,568,032	2,695,368	1,048,679	540,164	878,417	183,157
1868	7,236,916	‡1,565,732	2,733,167	1,058,548	535,192	948,792	183,987
1869	7,185,430	1,566,422	2,526,093	1,074,656	528,196	978,245	191,131
1870	7,149,134	1,516,800	2,677,940	1,072,048	528,578	1,022,515	184,496
1871	7,142,891	1,425,142	2,805,274	1,077,611	521,098	1,062,274	172,977
1872	7,313,329	1,410,648	2,971,309	1,089,075	522,368	1,120,450	179,559
1873	7,294,230	1,423,288	3,215,915	1,068,031	—	—	201,512

* The "Enrolled" tonnage of the United States is confined to the home and river trades, and is prohibited by law from going on a foreign voyage.

† In consequence of steps taken to clear the British Register in and since 1854, and in consequence of alterations in the system of measurement, the British tonnage, as compared with previous years, is a great deal less than it would have appeared to be if the old plan of taking the figures had continued, probably by 400,000 tons.

‡ The tonnage for the years 1865 to 1868 is partly old and partly new admeasurement; for 1869 and subsequent years new admeasurement.

TABLE, No. 6.

Principal Maritime Countries (Tonnage added to the Register).

Tonnage of Shipping added to the Merchant Navies of the *United Kingdom, United States, France, Holland,* and *Norway,* in each Year from 1842, or as far back as the Figures can be obtained, to 1874.

YEARS.	United Kingdom. *	United States. (Registered and Enrolled Tonnage, *i.e.* including Lake and River Steamers.)	France.	Holland.	Norway.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1842 - - -	129,929	129,084	31,761	—	—
1843 - - -	83,097	43,613	38,400	—	—
1844 - - -	94,995	103,537	34,068	—	—
1845 - - -	123,230	146,018	17,156	—	—
1846 - - -	125,350	188,204	51,734	—	—
1847 - - -	145,834	243,733	65,912	—	—
1848 - - -	122,552	318,076	44,963	—	—
1849 - - -	117,953	256,577	32,766	—	—
1850 - - -	133,695	272,219	44,032	25,196	11,115
1851 - - -	155,686	298,204	55,103	38,746	11,396
1852 - - -	174,215	351,493	57,780	39,894	21,155
1853 - - -	259,687	425,573	78,700	44,088	22,470
1854 - - -	337,586	535,616	96,060	55,312	40,618
1855 - - -	†383,814	583,450	104,886	52,964	37,701
1856 - - -	267,426	469,394	175,167	59,230	38,860
1857 - - -	416,322	378,805	117,804	55,084	44,242
1858 - - -	319,538	242,287	67,181	32,640	22,304
1859 - - -	271,682	156,602	37,891	21,732	25,074
1860 - - -	301,535	212,892	43,823	16,098	20,884
1861 - - -	371,310	233,194	45,892	17,194	25,359
1862 - - -	410,799	175,076	53,597	17,976	31,321
1863 - - -	697,624	310,884	60,136	21,808	48,987
1864 - - -	715,005	514,741	65,905	39,810	46,492
1865 - - -	549,237	383,806	77,686	25,252	90,678
1866 - - -	459,322	‡336,146	76,685	27,004	99,943
1867 - - -	390,211	‡303,528	83,323	25,596	90,686
1868 - - -	425,140	‡285,304	69,452	21,548	80,426
1869 - - -	402,918	‡275,230	74,583	22,638	66,557
1870 - - -	391,831	276,954	63,372	26,328	69,415
1871 - - -	435,074	273,226	59,279	23,560	68,758
1872 - - -	471,528	209,052	86,903	24,350	123,942
1873 - - -	477,293	359,245	60,170	—	—
1874 - - -	530,729	—	—	—	—

* The figures for the new tonnage added to the Register in the United Kingdom, as given above, relate to British built vessels only in the years 1842 to 1850; to British and foreign built vessels in 1851 and 1852; to British, foreign and colonial built vessels in 1853, 1854, 1855, and 1856; and to British, foreign, and colonial built vessels, and vessels transferred from the Colonies to the United Kingdom, in each year from 1855 to 1873.

† The alteration in the law of measurement of British tonnage, which came into operation in 1855, has the effect of decreasing tonnage by about 7·6 per cent. in sailing, and 13 per cent. in steam ships.

‡ New measurement.

TABLE, No. 7.

United Kingdom (Tonnage Built).

Total Tonnage of Vessels Built in the *United Kingdom*, in each Year from 1858 to 1873.

YEARS.	For Home and the Colonies.	For Foreigners.	Total.
	Tons.	*Tons.*	*Tons.*
1858	208,080	28,474	236,554
1859	185,970	26,774	212,744
1860	211,968	13,903	225,871
1861	200,839	7,487	208,326
1862	241,399	20,533	261,932
1863	364,724	17,320	382,044
1864	433,045	28,960†	462,005†
1865	415,204	32,965†	448,169†
1866	341,189*	38,350†	379,539†
1867	269,080*	36,899†	305,979†
1868	316,197*	46,131†	362,328†
1869	354,287*	33,805†	388,092†
1870	342,706*	51,651†	394,357†
1871	354,355	36,703†	391,058†
1872	392,971	81,747†	474,718†
1873	370,666	82,877†	453,543†

* Including the following, transferred to the Colonies:

	Tons.
In 1866	5,925
In 1867	4,075
In 1868	2,005
In 1869	3,498
In 1870	407

Not distinguished previous to 1866.

† Including the following, built for War purposes for Foreigners:

	Tons.
In 1864	6,497
In 1865	3,700
In 1866	10,301
In 1867	4,994
In 1868	10,254
In 1869	2,354
In 1870	970
In 1871	80
In 1872	40
In 1873	280

Not distinguished previous to 1864.

Note—The Returns for the years prior to 1871 denote the tonnage of the newly-built vessels which were *first registered* in those years, but in the Returns for that and the following years the tonnage of vessels, the building of which was completed in those years, is given, whether registered or not. It is impracticable to give the tonnage of the vessels transferred to the Colonies subsequent to the year 1870.

TABLE, No. 8.

United Kingdom (Tonnage Added and Deducted).

Number and Tonnage of Sailing and Steam Vessels Added to and Deducted from the Register in the *United Kingdom*, during the Year 1873, and remaining on the 31st December 1873.

	Sailing Vessels.		Steam Vessels.		Total.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
Upon the Register on the 31st December 1872	21,421	4,145,888	3,662	1,536,075	25,083	5,681,963
Added to the Register during 1873:—						
New Vessels, British Built	421	87,079	382	277,564	803	364,643
Purchased from Foreigners or the Colonies	198	89,469	17	8,455	215	97,924
Other Vessels	22	5,992	6	1,381	28	7,373
Tonnage added in consequence of re-measurements.	-	698	-	6,655	-	7,353
Total Added	641	183,238	405	294,055	1,046	477,293
Deducted from the Register during 1873:						
Vessels wrecked, broken up, or otherwise destroyed.	803	222,551	114	71,131	917	293,682
Sold to Foreigners or the Colonies	210	76,138	96	40,438	306	116,576
Other vessels	28	2,440	5	3,501	33	5,941
Tonnage deducted in consequence of re-measurements.	-	3,416	-	3,273	-	6,689
Total Deducted	1,041	304,545	215	118,343	1,256	422,888
Actual Addition (+) or deduction (—) during the year.	(—) 400	(—)121,307	(+) 190	(+)175,712	(—) 210	(+)54,405
Upon the Register on the 31st December 1873	21,021	4,024,581	3,852	1,711,787	24,873	5,736,368

TABLE, No. 9.

Principal Maritime Countries (Steam Tonnage).

Steam Tonnage belonging to the *British Empire, United States, France, Holland,* and *Hamburgh,* from 1838 to 1873.

Year.	British Empire.	United States.		France.	Holland.	Hamburgh.
		Registered for Oversea Foreign Trade.	*Enrolled for Home Trade, including Lake and River Vessels.			
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1838	82,716	2,791	190,632	9,693	—	—
1839	86,731	5,149	199,789	9,810	—	—
1840	95,807	4,155	198,184	9,585	—	—
1841	104,845	746	174,342	10,183	—	1,161
1842	118,930	4,701	224,960	9,757	—	—
1843	121,455	5,373	231,494	9,536	—	—
1844	125,675	6,909	265,270	9,293	—	904
1845	131,202	6,492	19,527	9,390	—	598
1846	144,784	6,287	341,606	10,921	1,658	1,186
1847	156,557	5,631	399,210	12,567	1,976	1,674
1848	168,078	16,068	411,823	13,152	1,976	773
1849	177,310	20,870	441,525	13,391	3,336	3,073
1850	187,631	44,942	481,005	13,925	3,672	2,842
1851	204,654	62,390	521,217	19,460	3,692	2,263
1852	227,306	79,704	563,536	22,171	3,950	1,417
1853	264,336	90,520	514,098	26,399	4,452	1,422
1854	326,484	95,036	581,571	35,098	5,064	7,042
1855	†408,290	115,045	655,240	45,093	5,868	5,983
1856	417,717	89,715	583,362	63,926	10,428	8,165
1857	453,966	86,873	618,911	71,979	13,302	12,008
1858	488,415	78,027	651,363	66,587	13,768	10,440
1859	472,764	92,747	676,004	65,006	14,340	10,611
1860	500,144	97,296	770,641	68,025	13,746	10,184
1861	561,023	102,608	774,596	73,267	13,012	10,517
1862	597,932	113,998	596,465	78,981	12,636	11,595
1863	657,026	133,215	489,755	84,918	13,994	13,228
1864	769,398	106,519	853,816	97,884	15,862	13,842
1865	902,052	‡98,008	‡969,131	108,328	15,068	15,469
1866	952,318	‡198,289	‡885,023	127,777	16,184	18,074
1867	973,415	‡198,115	‡993,765	33,158	20,694	23,206
1868	977,292	‡221,939	‡977,476	135,259	22,194	27,641
1869	1,033,247	‡213,252	‡890,316	142,942	22,568	29,540
1870	1,202,184	192,544	882,551	154,415	26,394	32,450
1871	1,411,803	180,914	906,723	160,478	36,644	34,252
1872	1,640,639	177,666	933,887	177,462	46,370	54,132
1873	1,825,738	193,423	963,020	185,165	—	78,413

* The "Enrolled" tonnage of the United States is confined to the home and river trades, and is prohibited by law from going on a foreign voyage.

† In consequence of steps taken to clear the British Register in and since 1854, and of alterations in the system of measurement, the British tonnage since 1854, as compared with the previous years, is a great deal less than it would have appeared to be if the old plan of taking the figures had continued.

‡ The tonnage for the years 1865 to 1868 is partly old and partly new admeasurement; for the year 1869 and subsequent years it is all new admeasurement.

TABLE, No. 10.

Trade with British Possessions.

Tonnage of Shipping Entered and Cleared in the *United Kingdom* in the Trade with the *British Possessions*, distinguishing British from Foreign Tonnage, from 1851 to 1873 (with Cargoes and in Ballast).

YEARS.	British Ships.	Foreign Ships.	Total.
	Tons.	*Tons.*	*Tons.*
1851	3,392,076	282,949	3,675,025
1852	3,282,241	357,835	3,640,076
1853	3,448,144	585,507	4,033,651
1854	4,070,217	568,580	4,638,797
1855	3,404,562	565,162	3,969,724
1856	3,990,161	636,989	4,627,150
1857	4,291,108	858,768	5,149,876
1858	4,017,450	698,372	4,715,822
1859	4,076,907	794,855	4,871,762
1860	4,335,862	733,398	5,069,260
1861	4,818,211	1,033,482	5,851,693
1862	4,874,382	586,968	5,461,350
1863	5,430,565	682,655	6,113,220
1864	5,278,491	551,680	5,830,171
1865	5,219,950	434,918	5,654,868
1866	5,370,692	485,090	5,855,782
1867	5,275,469	502,920	5,778,389
1868	5,335,711	572,885	5,908,596
1869	5,260,551	570,781	5,831,332
1870	5,495,050	548,978	6,044,028
1871	5,939,377	597,877	6,537,254
1872	6,130,130	794,112	6,924,242
1873	6,287,061	943,418	7,230,479

TABLE, No. 11.

Trade with British North America.

Tonnage of Shipping Entered and Cleared in the *United Kingdom* in the Trade with *British North America*, distinguishing British from Foreign Tonnage, from 1847 to 1873 (with Cargoes and in Ballast).

Years.	British Vessels.	Foreign Vessels.	Total.
	Tons.	*Tons.*	*Tons.*
1847	1,783,275	9,605	1,792,880
1848	1,554,783	Nil	1,554,783
1849	1,493,338	1,834	1,495,172
1850	1,278,359	83,510	1,361,869
1851	1,461,443	128,408	1,589,851
1852	1,306,185	168,441	1,474,626
1853	1,316,285	255,301	1,571,586
1854	1,641,190	278,654	1,919,844
1855	1,000,034	186,693	1,186,727
1856	1,402,682	222,145	1,624,827
1857	1,473,121	305,618	1,778,739
1858	1,322,415	236,638	1,559,053
1859	1,268,401	317,293	1,585,694
1860	1,595,483	251,455	1,846,938
1861	1,867,378	555,369	2,422,747
1862	1,804,221	191,698	1,995,919
1863	2,013,427	264,493	2,277,920
1864	1,653,473	229,995	1,883,468
1865	1,770,637	194,666	1,965,303
1866	1,775,940	224,347	2,000,287
1867	1,586,354	175,580	1,761,934
1868	1,652,724	259,015	1,911,739
1869	1,645,803	297,076	1,942,879
1870	1,799,514	261,773	2,061,287
1871	1,871,294	280,369	2,151,663
1872	1,971,350	395,166	2,366,516
1873	1,986,605	531,030	2,517,635

TABLE, No. 12. - - - - - - - - -

Trade of East Indies (Countries).

Tonnage of Shipping Entered and Cleared in *British India* from and for all Foreign Countries (distinguishing the *United Kingdom, America,* and *France*) and the *Indian* Home States from 1837 to 1874.

Years ended	From and to the United Kingdom.	From and to Indian Home States.	From and to Foreign Countries.				Total from and to all Countries.
			North and South America.	France.	Other Foreign Countries and British Possessions.	Total Foreign Countries and British Possessions.	
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
30 April - 1838	235,733	599,900	11,548	17,198	401,839	430,585	1,266,218
„ 1839	231,220	674,007	17,047	20,972	404,727	442,746	1,347,973
			The above figures represent the trade of the ports of Calcutta, Madras,				
„ 1840	—	—	—	—	—	—	—
„ 1841	338,041	1,106,577	16,060	9,964	710,718	736,742	2,181,360
„ 1842	411,435	1,244,001	25,923	22,768	713,497	762,188	2,417,624
„ 1843	388,167	1,300,682	19,158	18,764	699,684	737,606	2,426,455
„ 1844	370,802	1,319,044	19,034	20,597	768,679	808,310	2,498,156
„ 1845	430,268	1,300,003	24,785	14,861	769,571	809,217	2,539,488
„ 1846	472,927	1,481,679	29,895	21,916	743,429	795,240	2,749,846
„ 1847	467,354	1,284,863	28,209	12,842	741,866	782,917	2,535,134
„ 1848	477,933	1,422,724	34,458	31,886	779,740	846,084	2,746,741
„ 1849	427,546	1,604,319	35,947	16,737	833,058	885,742	2,917,607
„ 1850	534,477	1,881,086	60,768	24,396	783,992	869,156	3,284,719
„ 1851	625,994	1,895,965	55,611	39,978	840,847	936,436	3,458,395
„ 1852	590,579	1,926,591	62,161	33,330	907,072	1,002,563	3,519,733
„ 1853	Particulars not given this year - -		- -	- -	- -	- -	3,775,533
„ 1854	735,388	1,297,688	66,318	67,476	1,068,701	1,202,495	3,235,571
„ 1855	791,073	1,141,382	140,647	58,174	1,120,980	1,319,801	3,252,256
„ 1856	1,266,581	1,409,900	191,943	199,218	1,138,564	1,529,725	4,206,206
„ 1857	1,158,563	1,637,460	188,188	147,788	1,417,281	1,753,257	4,549,280
„ 1858	1,462,609	2,106,434	146,358	181,386	1,859,609	2,187,353	5,756,396
„ 1859	1,268,909	1,862,156	150,810	120,500	1,658,677	1,929,987	5,061,052
„ 1860	1,214,056	1,959,363	125,596	76,658	1,523,279	1,725,533	4,898,952
„ 1861	1,312,232	1,997,379	106,085	110,175	1,576,103	1,792,363	5,101,974
„ 1862	1,590,644	2,485,467	85,539	114,070	1,611,631	1,811,240	5,887,351
„ 1863	1,457,375	2,273,699	83,131	114,884	1,683,516	1,881,131	5,612,205
„ 1864	1,756,547	2,738,589	83,824	132,021	2,143,271	2,359,116	6,854,252
„ 1865	1,693,137	3,652,251	99,649	106,337	2,369,543	2,575,529	7,920,917
„ 1866	1,765,542	3,460,916	121,874	91,206	2,181,846	2,394,926	7,621,384
†31 March 1867	1,445,809	2,817,492	132,913	73,367	1,901,180	2,107,460	6,370,761
„ 1868	1,971,650	2,727,656	116,855	92,949	1,874,045	2,083,849	6,783,155
„ 1869	2,025,723	3,221,356	190,828	128,851	2,041,869	2,361,548	7,608,627
„ 1870	1,765,933	3,437,282	162,146	150,226	1,930,846	2,243,218	7,446,433
„ 1871	1,874,628	3,437,282	161,063	99,941	2,155,142	2,416,146	7,728,056
„ 1872	2,118,672	3,687,641	226,455	110,697	2,190,173	2,527,325	8,333,638
„ 1873	2,101,264	4,050,859	312,569	80,787	2,265,360	2,658,716	8,810,839
„ 1874	2,200,905	4,366,342	282,739	104,951	2,058,015	2,445,705	9,012,952

* Steamers are not included till 1854; they amounted in 1848 to 33,891 tons; in 1849 to 29,217 tons; in 1850 to 45,407 tons; in 1851 to 45,912 tons; in 1852 to 66,889 tons; in 1853 to 109,711 tons.
† Eleven months only.

TABLE, No. 12.

Trade of East Indies (Flags).

Tonnage of Shipping Entered and Cleared in *British India*, distinguishing *British*, *American*, and *French* Ships from 1837 to 1874.

Years ended	British.	Native Craft.	Foreign Flags.				Total. of all Flags.
			American.	French.	Of other Countries.	Total Foreign.	
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
30 April 1838	900,101	220,237	8,879	46,303	90,698	145,880	1,266,218
„ 1839	784,179	410,626	17,897	47,594	87,677	153,168	1,347,973
and Bombay only. The following represent the trade of British India.							
30 April 1840	—	—	—	—	—	—	—
„ 1841	814,781	1,225,874	20,081	37,187	83,437	140,705	2,181,360
„ 1842	957,711	1,292,588	26,453	50,272	90,600	167,325	2,417,624
„ 1843	991,011	1,271,515	20,098	49,668	94,163	163,929	2,426,455
„ 1844	1,092,889	1,248,262	21,878	45,985	89,142	157,005	2,498,156
„ 1845	1,040,768	1,347,489	26,069	36,384	88,778	151,231	2,539,488
„ 1846	1,121,080	1,454,120	30,384	64,684	79,578	174,646	2,749,846
„ 1847	1,146,848	1,237,096	34,457	49,195	67,538	151,190	2,535,134
„ 1848	1,136,210	1,400,227	41,458	64,322	70,633	176,413	2,712,850*
„ 1849	1,203,246	1,487,686	50,371	62,886	84,201	197,458	2,888,390*
„ 1850	1,298,258	1,740,131	70,217	62,596	68,110	200,923	3,239,312*
„ 1851	1,437,016	1,715,768	67,159	90,230	102,310	259,699	3,412,483*
„ 1852	1,409,986	1,767,331	68,670	101,241	105,616	275,527	3,452,844*
„ 1853	1,542,742	1,799,348	81,565	132,253	109,914	323,732	3,665,822*
„ 1854	1,884,043	900,757	141,557	139,924	169,290	450,771	3,235,571
„ 1855	1,822,157	856,984	221,389	140,010	211,716	573,115	3,252,256
„ 1856	2,166,675	1,129,574	431,976	253,172	224,809	909,957	4,206,206
„ 1857	2,475,472	1,220,087	412,475	280,016	161,230	853,721	4,549,280
„ 1858	3,480,029	1,281,911	396,613	334,370	263,473	994,456	5,756,396
„ 1859	2,947,809	1,235,725	369,000	288,191	220,327	877,518	5,061,052
„ 1860	2,918,001	1,263,387	329,486	214,083	173,995	717,564	4,898,952
„ 1861	2,866,123	1,401,111	358,068	279,941	196,731	834,740	5,101,974
„ 1862	3,291,978	1,445,013	616,716	305,485	228,159	1,150,360	5,887,351
„ 1863	3,392,480	1,341,577	400,268	253,625	224,255	878,148	5,612,205
„ 1864	4,408,922	1,451,743	360,593	349,369	283,625	993,587	6,854,252
„ 1865	5,417,521	1,582,864	243,413	301,955	375,164	920,532	7,920,917
„ 1866	5,348,840	1,533,431	208,282	279,761	251,070	739,113	7,621,384
†31 March 1867	4,819,613	828,675§	172,344‡	168,524	170,878	722,473‖	6,370,761
„ 1868	5,391,375	696,336§	134,374‡	172,958	199,621	695,444‖	6,783,155
„ 1869	5,869,633	901,514§	188,913‡	164,932	253,555	837,480‖	7,608,627
„ 1870	5,877,660	826,657§	108,971‡	147,534	276,205	742,116‖	7,446,433
„ 1871	6,084,626	836,021§	150,138‡	171,121	293,356	807,409‖	7,728,056
„ 1872	6,526,894	959,811§	143,242‡	153,180	367,319	846,933‖	8,333,638
„ 1873	6,709,928	1,011,111§	142,031‡	203,222	508,199	1,089,800‖	8,810,839
„ 1874	7,137,908	867,205§	132,949‡	175,143	699,747	1,007,839‖	9,012,952

† Eleven months only. ‡ Engaged in foreign trade only. § Engaged in coasting trade only.

‖ Including tonnage of foreign shipping engaged in the coasting trade to the amount of 210,727 in 1867, 188,491 in 1868, 230,680 in 1869, 209,406 in 1870, 192,794 in 1871, 183,192 in 1872, 236,348 in 1873, and 194,541 in 1874.

TABLE, No. 13.

East Indies.—Trade with United Kingdom.

STATEMENT showing the Tonnage of American and French Shipping Entered and Cleared in *British India* in the Trade with the *United Kingdom*, from 1857 to 1866.

Years ending 30 April.	PRESIDENCIES.	British.	American.	French.	Other Countries.	Total.
		Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1857	Bengal	439,336	69,798	4,979	30,954	545,067
	Madras	283,267	1,657	474	2,477	287,875
	Bombay	292,876	28,028	466	4,251	325,621
	Total	1,015,479	99,483	5,919	37,682	1,158,563
1858	Bengal	571,023	115,086	2,524	42,480	731,113
	Madras	304,500	- -	1,785	9,112	315,397
	Bombay	370,068	24,398	2,348	19,285	416,099
	Total	1,245,591	139,484	6,657	70,877	1,462,609
1859	Bengal	526,093	74,305	3,437	38,507	642,342
	Madras	202,300	790	1,957	4,107	209,154
	Bombay	357,213	44,657	1,588	13,955	417,413
	Total	1,085,606	119,752	6,982	56,569	1,268,909
1860	Bengal	440,574	53,280	466	32,739	527,059
	Madras	221,697	3,831	3,149	2,007	230,684
	Bombay	395,011	45,784	3,124	12,394	456,313
	Total	1,057,282	102,895	6,739	47,140	1,214,056

TABLE, No. 13.—East Indies.—Trade with United Kingdom—*continued.*

Year ending 30 April.	PRESIDENCIES.	British.	American.	French.	Other Countries.	TOTAL.
		Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1861	Bengal	481,890	80,936	6,295	41,151	610,272
	Madras	206,481	3,717	7,247	5,401	222,846
	Bombay	437,459	26,040	1,804	13,811	479,114
	TOTAL	1,125,830	110,693	15,346	60,363	1,312,232
1862	Bengal	443,200	114,466	2,366	22,435	588,122
	British Burmah	117,652	93,486	8,111	38,122	251,626
	Madras	247,660	10,615	1,562	1,650	261,487
	Bombay	459,032	23,640	498	6,149	489,319
	TOTAL	1,267,544	242,207	12,537	68,356	1,590,644
1863	Bengal	485,464	59,653	4,289	8,256	557,662
	British Burmah	59,205	81,469	600	47,875	189,149
	Madras	243,680	6,477	3,063	1,591	254,811
	Bombay	439,636	6,008	350	9,759	455,753
	TOTAL	1,227,985	153,607	8,302	67,481	1,457,375
1864	Bengal	632,359	30,957	12,188	9,942	685,446
	British Burmah	94,937	58,236	1,483	54,231	208,887
	Madras	318,424	6,021	3,621	1,860	329,926
	Bombay	517,050	4,122	1,563	9,553	532,288
	TOTAL	1,562,770	99,336	18,855	75,586	1,756,547
1865	Bengal	609,506	9,226	1,768	3,677	624,177
	British Burmah	112,233	73,663	1,000	71,351	258,247
	Madras	287,231	- -	2,063	3,065	292,359
	Bombay	514,807	- -	465	3,082	518,354
	TOTAL	1,523,777	82,889	5,296	81,175	1,693,137
1866	Bengal	590,892	8,200	3,608	873	603,573
	British Burmah	162,851	25,143	- -	53,438	241,432
	Madras	327,740	972	959	3,037	332,708
	Bombay	580,197	856	1,767	5,009	587,829
	TOTAL	1,661,680	35,171	6,334	62,357	1,765,542

N B.—The information for years after 1866 cannot be given.

TABLE, No. 14.

Trade of France and United Kingdom Compared.

FRANCE, 1863.

Tonnage of Ships Entered and Cleared in the Ports of *France*, with Cargoes only. Taken from the "Tableau Général du Commerce de la France," 1863, pp. 448, 450, and 513.

	French Flag.	Foreign Flags. Of the Country whence Arrived, or to which Bound.	Foreign Flags. Of other Countries.	Total.
Foreign Trade:	*Tons.*	*Tons.*	*Tons.*	*Tons.*
In the trade between France and the British Dominions in Europe	656,550	2,320,685	36,752	3,013,987
In the trade between France and the British Colonies:				
Africa	31,461	2,342	1,332	35,135
Asia	77,307	8,661	18,181	104,149
America	4,711	8,176	1,194	14,081
Total	113,479	19,179	20,707	153,365
In the trade between France and other Foreign Countries	1,894,951	1,142,810	740,486	3,778,247
Total Foreign Trade	2,664,980	3,482,674	797,945	6,945,599
Colonial Trade:		Total Foreign.		
In the Trade between France and her Colonies, including Algeria	653,909	968		654,877
Coasting Trade	6,318,178			6,318,178
Gross Total (exclusive of Fisheries)	9,637,067	4,281,587		13,918,654

Of the whole French direct Trade with the British Dominions in Europe—
The British flag has 77 per cent.
The French flag „ 22 „
And other flags have 1 „

Note.—The tonnage belonging to France in December 1863 was—

Sailing Vessels.	Steam Vessels.	Total Tonnage.
Tons.	*Tons.*	*Tons.*
900,317	84,918	985,235

UNITED KINGDOM, 1863.

Tonnage of Ships Entered and Cleared in the Ports of the *United Kingdom*, with Cargoes only. Taken from the "Annual Statement" for 1863, pp. 364 to 375, and 425.

	British Flag.	Foreign Flags. Of the Country whence Arrived, or to which Bound.	Foreign Flags. Of other Countries	Total.
Foreign Trade:	*Tons.*	*Tons.*	*Tons.*	*Tons.*
In the trade between the United Kingdom and France	1,899,073	534,809	20,865	2,454,747
In the Trade between the United Kingdom and other Countries	8,351,945	3,780,623	2,819,548	14,952,116
Total Foreign Trade (exclusive of Fisheries)	10,251,018	4,315,432	2,840,413	17,406,863
Colonial Trade:				
In the Trade between the United Kingdom and the British Possessions	5,002,451		606,271	5,605,722
		Total Foreign.		
Coasting Trade	34,924,353	149,185		35,073,538
Gross Total (exclusive of Fisheries)	50,177,822	7,911,301		58,089,123

Note.—The tonnage of registered vessels which belonged to the United Kingdom and British Possessions respectively on the 31st December 1863 was as follows, viz.:—

(Taken from the "Annual Statement," p. 418.)	Sailing Vessels.	Steam Vessels.	Total Tonnage.
	Tons.	*Tons.*	*Tons.*
The United Kingdom	4,655,984	595,773	5,251,757
British Possessions	1,311,393	61,253	1,372,646
Total	5,967,377	657,026	6,624,403

FRANCE, 1873.

TONNAGE of SHIPS Entered and Cleared in the Ports of *France*, with Cargoes only. Taken from the "Tableau Général du Commerce de la France," 1873, pp. 546, 548, and 615.

	FRENCH FLAG.	FOREIGN FLAGS.		TOTAL.
		Of the Country whence Arrived, or to which Bound.	Of other Countries.	
FOREIGN TRADE:	*Tons.*	*Tons.*	*Tons.*	*Tons.*
In the trade between France and the British Dominions in Europe	837,005	3,731,860	128,806	4,697,671
In the trade between France and the British Colonies:				
Africa	71,911	1,898	7,215	81,024
Asia	34,014	17,684	22,190	73,888
America	10,455	8,500	5,800	24,755
TOTAL	116,380	28,082	35,205	179,667
In the trade between France and other Foreign Countries	2,287,261	1,810,229	2,121,225	6,218,715
TOTAL Foreign Trade	3,240,646	5,570,171	2,285,236	11,096,053
		Total Foreign.		
COLONIAL TRADE:				
In the trade between France and her Colonies, including Algeria	1,211,485	90,419		1,301,904
COASTING TRADE	6,080,724			6,080,724
GROSS TOTAL (exclusive of Fisheries)	10,532,855	7,945,826		18,478,681

Of the whole French direct Trade with the British Dominions in Europe—
The British flag has 80 per cent.
The French flag has 17 ,,
The other flags have 3 ,,

Note.—The tonnage belonging to France in December 1873, was—

Sailing Vessels.	Steam Vessels.	TOTAL TONNAGE.
Tons.	*Tons.*	*Tons.*
882,866	185,165	1,068,031

UNITED KINGDOM, 1873.

TONNAGE of SHIPS Entered and Cleared in the Ports of the *United Kingdom*, with Cargoes only. Taken from the "Annual Statement" for 1873, pp. 2 to 10, and 136.

	BRITISH FLAG.	FOREIGN FLAGS.		TOTAL.
		Of the Country whence Arrived, or to which Bound.	Of other Countries.	
FOREIGN TRADE:	*Tons.*	*Tons.*	*Tons.*	*Tons.*
In the trade between the United Kingdom and France	3,353,797	723,979	108,133	4,185,909
		Total Foreign.		
In the trade between the United Kingdom and other Countries	16,974,463	10,225,084		27,199,547
TOTAL Foreign Trade (exclusive of Fisheries)	20,328,260	11,057,196		31,385,456
COLONIAL TRADE:				
In the trade between the United Kingdom and the British Possessions	5,789,751	749,284		6,539,035
COASTING TRADE	40,380,508	251,506		40,632,014
GROSS TOTAL (exclusive of Fisheries)	66,498,519	12,057,986		78,556,505

Note.—The tonnage of registered vessels which belonged to the United Kingdom and British Possessions respectively, on the 31st December 1873, was as follows, viz.:—

(Taken from the "Annual Statement of Navigation and Shipping," p. 290.)	Sailing Vessels.	Steam Vessels.	TOTAL TONNAGE.
	Tons.	*Tons.*	*Tons.*
United Kingdom	4,024,581	1,711,787	5,736,368
British Possessions	1,443,911	113,951	1,557,862
TOTAL	5,468,492	1,825,738	7,294,230

TABLE, No. 15.

Trade between United Kingdom and United States.

Direct Trade between the *United Kingdom* and the *United States*, distinguishing *British*, *United States*, and other Ships, from 1853 to 1873 (with Cargoes only).

YEARS.	British.	United States.	Of other Countries.	Total.
	Tons.	*Tons.*	*Tons.*	*Tons.*
1853 - - -	857,250	1,592,939	91,199	2,541,388
1854 - - -	741,401	1,847,069	86,431	2,674,901
1855 - - -	420,268	1,854,308	49,445	2,324,021
1856 - - -	664,250	2,188,612	82,823	2,935,685
1857 - - -	650,294	1,827,611	60,698	2,538,603
1858 - - -	562,048	1,826,841	108,561	2,497,450
1859 - - -	784,543	1,635,563	122,401	2,542,507
1860 - - -	945,668	2,245,234	165,712	3,356,614
1861 - - -	1,041,818	2,052,935	228,833	3,323,586
1862 - - -	877,115	1,646,885	319,701	2,843,701
1863 - - -	1,173,463	927,186	308,173	2,408,822
1864 - - -	1,250,585	674,408	196,499	2,121,492
1865 - - -	1,231,660	484,098	152,692	1,868,450
1866 - - -	1,853,145	745,467	310,501	2,909,113
1867 - - -	2,009,687	762,544	288,330	3,060,561
1868 - - -	2,103,872	714,423	355,696	3,173,991
1869 - - -	2,464,012	669,444	367,810	3,501,266
1870 - - -	2,625,991	826,692	287,282	3,739,965
1871 - - -	3,335,966	1,117,465	611,775	5,065,206
1872 - - -	3,488,452	524,309	829,698	4,842,459
1873 - - -	3,641,758	634,753	1,082,685	5,359,196

TABLE, No. 16.

United States Ships in Trade of United Kingdom.

Foreign Trade of the *United Kingdom*, distinguishing the Direct Trade with the *United States*, and distinguishing also *British* and *United States* Ships in 1848, 1853, 1858, and 1863, and from 1868 to 1873.

Entered and Cleared with Cargoes only.	British Ships (U. K. and its Dependencies).	Foreign Ships.		Total.
		American (U. S.)	Of other Countries.	
	Tons.	*Tons.*	*Tons.*	*Tons.*
Year 1848.				
Gross foreign trade	7,574,192	1,149,647	1,906,859	10,630,698
Direct trade with the United States				
Exclusive of such trade				
Year 1853.				
Gross foreign trade	9,064,705	1,863,912	4,452,544	15,381,161
Direct trade with the United States	857,250	1,592,939	91,199	2,541,388
Exclusive of such trade	8,207,455	270,973	4,361,345	12,839,773
Year 1858.				
Gross foreign trade	11,114,330	2,417,301	5,228,330	18,759,961
Direct trade with the United States	562,048	1,826,841	108,561	2,497,450
Exclusive of such trade	10,552,282	590,460	5,119,769	16,262,511
Year 1863.				
Gross foreign trade	15,263,047	1,342,390	6,419,726	23,025,163
Direct trade with the United States	1,173,463	927,186	308,173	2,408,822
Exclusive of such trade	14,089,584	415,204	6,111,553	20,616,341
Year 1868.				
Gross foreign trade	20,474,621	1,021,746	7,828,309	29,324,676
Direct trade with the United States	2,103,872	714,423	355,696	3,173,991
Exclusive of such trade	18,370,749	307,323	7,472,613	26,150,685
Year 1869.				
Gross foreign trade	21,355,939	845,505	8,202,240	30,403,684
Direct trade with the United States	2,464,012	669,444	367,810	3,501,266
Exclusive of such trade	18,891,927	176,061	7,834,430	26,902,418
Year 1870.				
Gross foreign trade	22,243,039	1,134,215	8,247,426	31,624,680
Direct trade with the United States	2,625,991	826,692	287,282	3,739,965
Exclusive of such trade	19,617,048	307,523	7,960,144	27,884,715
Year 1871.				
Gross foreign trade	24,646,703	1,425,873	9,430,221	35,502,797
Direct trade with the United States	3,335,966	1,117,465	611,775	5,065,206
Exclusive of such trade	21,310,737	308,408	8,818,446	30,437,591
Year 1872.				
Gross foreign trade	25,714,276	846,559	10,593,457	37,154,292
Direct trade with the United States	3,488,452	524,309	829,698	4,842,459
Exclusive of such trade	22,225,824	322,250	9,763,759	32,311,833
Year 1873.				
Gross foreign trade	26,127,942	940,772	10,865,708	37,934,422
Direct trade with the United States	3,641,758	634,753	1,082,685	5,359,196
Exclusive of such trade	22,486,184	306,019	9,783,023	32,575,226

TABLE, No. 17.

British Ships in Trade of United States.

Foreign Trade of the *United States*, distinguishing the Direct Trade with the *United Kingdom*, and distinguishing also *United States* and *British* Ships, in 1848–49, 1853–54, 1858–59, 1863–64, and 1868–69. Taken from the Volumes of "Commerce and Navigation of the United States" for the respective Years.

Year 1848–49.

Entered and Cleared.	American Ships.	Foreign Ships.		Total.
		British.	Of Other Countries.	
	Tons.	*Tons.*	*Tons.*	*Tons.*
Gross foreign trade	5,412,045	2,931,980	454,244	8,798,269
Trade with Canada and other British North American Possessions	2,040,525	1,824,878	1,054	3,866,457
Exclusive of such trade	3,371,520	1,107,102	453,190	4,931,812
Direct trade with the United Kingdom	1,251,720	967,033	9,611	2,228,364
Exclusive of both trades	2,119,800	140,069	443,579	2,703,448

Year 1853–54.

Gross foreign trade	7,663,507	3,466,429	773,597	11,903,533
Trade with Canada and other British North American Possessions	2,165,316	2,193,928	24,268	4,383,512
Exclusive of such trade	5,498,191	1,272,501	749,329	7,520,021
Direct trade with the United Kingdom	1,751,104	986,979	83,756	2,821,839
Exclusive of both trades	3,747,087	285,522	665,573	4,698,182

Year 1858–59.

Gross foreign trade	1,563,015	4,202,105	956,670	15,721,790
Trade with Canada and other British North American Possessions	4,520,517	2,947,025	21,682	7,489,254
Exclusive of such trade	6,042,468	1,255,080	934,988	8,232,536
Direct trade with the United Kingdom	1,662,263	939,516	74,151	2,675,930
Exclusive of both trades	4,380,205	315,564	860,837	5,556,606

Year 1863–64.

Gross foreign trade	6,157,382	5,989,327	1,223,023	13,369,732
Trade with Canada and other British North American Possessions	3,435,442	3,155,296	16,654	6,607,392
Exclusive of such trade	2,721,940	2,834,031	1,206,369	6,762,340
Direct trade with the United Kingdom	710,245	1,694,409	208,062	2,612,716
Exclusive of both trades	2,011,695	1,139,622	998,307	4,149,624

Year 1868–69.

Gross foreign trade	6,784,031	8,848,142	1,872,122	17,504,295
Trade with Canada and other British North American Possessions	2,639,359	4,690,573	19,956	7,349,888
Exclusive of such trade	4,144,672	4,157,569	1,852,166	10,154,407
Direct trade with the United Kingdom	601,902	2,972,037	195,491	3,769,430
Exclusive of both trades	3,542,770	1,185,532	1,656,675	6,384,977

TABLE, No. 18.

Passenger Ships.

NUMBER and Tonnage of Ships that Cleared under the Passengers Acts from the United Kingdom, from 1853 to 1874, both Years inclusive, distinguishing British from Foreign Ships, and showing the Numbers of Passengers Carried by them respectively, and the Countries to which they Proceeded.

YEAR.	Number and Tonnage of Ships in which Passengers were Carried.				COUNTRIES TO WHICH PASSENGERS WERE CARRIED.										Total Passengers Carried	
	British Ships.		Foreign Ships.		United States.		British North American Possessions.		New South Wales and Australia.		New Zealand.		Other Parts.			
					Number of Passengers		Number of Passengers		Number of Passengers		Number of Passengers		Number of Passengers		In British Ships.	In Foreign Ships.
					In British Ships.	In Foreign Ships.	In British Ships.	In Foreign Ships.	In British Ships.	In Foreign Ships.	In British Ships.	In Foreign Ships.	In British Ships.	In Foreign Ships.		
	Number.	*Tons.*	*Number.*	*Tons.*												
1853	524	354,140	460	479,736	34,794	182,416	29,050	968	44,108	8,631	1,153	–	538	–	109,643	192,015
1854	508	391,325	385	443,748	22,883	154,551	37,873	410	74,340	2,462	867	–	420	–	136,383	157,423
1855	263	213,497	272	344,913	2,092	87,016	14,502	1,157	39,756	230	2,195	–	108	–	58,653	88,403
1856	264	258,951	275	363,493	8,661	92,141	11,834	679	36,936	502	3,845	–	596	44	61,872	93,366
1857	357	368,601	269	354,031	23,190	94,233	14,154	2,094	49,372	4,852	3,994	–	834	–	91,544	101,179
1858	269	291,233	190	257,334	11,373	40,662	4,826	968	30,036	1,475	5,695	–	2,337	–	54,267	43,105
1859	254	284,292	181	243,391	15,004	45,467	2,245	–	19,978	509	8,277	–	9,785	–	55,289	45,976
1860	210	255,936	184	249,194	21,519	49,666	2,470	203	16,103	507	4,960	–	3,566	–	48,618	50,376
1861	199	256,957	108	137,242	15,688	23,641	3,537	–	16,937	–	4,143	–	2,034	–	42,339	23,641
1862	277	344,888	137	175,323	20,956	30,008	7,239	783	28,176	–	11,129	–	1,550	–	69,050	30,791
1863	402	533,249	189	241,125	60,322	72,362	13,322	–	36,381	–	13,317	–	1,029	–	124,371	72,362
1864	406	513,882	138	186,026	82,086	58,922	11,769	–	25,944	–	11,290	–	373	–	131,462	58,922
1865	417	566,109	92	125,689	109,807	31,300	16,403	–	27,742	–	6,432	–	421	–	160,805	31,300
1866	414	615,380	80	101,484	116,749	24,015	12,086	–	17,196	–	3,381	–	209	–	149,621	24,015
1867	402	600,240	52	65,453	138,196	10,097	14,507	–	7,697	–	3,255	–	183	–	163,838	10,097
1868	406	614,823	31	40,167	137,230	9,044	20,249	–	5,994	–	2,605	–	771	–	167,029	9,044
1869	480	750,650	20	30,438	187,895	7,891	31,941	–	8,337	–	2,174	–	38	–	230,385	7,891
1870	539	877,624	18	26,988	184 043	4,805	33,142	–	9 255	–	3,194	–	147	–	229,781	4,805
1871	553	952,609	20	31,027	185,724	4,774	31,551	–	6,306	–	2,252	–	–	–	225,833	4,774
1872	688	1,192,302	8	12,356	210,222	1,913	27,431	–	6,302	–	6,021	–	1,895	–	251,871	1,913
1873	678	1,219,783	6	12,658	223,321	970	36,292	–	10,106	–	11,680	–	398	–	281,797	970
1874	641	1,156,870	21	43,822	132,324	5.294	24,056	–	13,245	–	35,738	–	793	–	206,156	5,294

TABLE, No. 19.

Foreign Trade of Liverpool.

Tonnage of Shipping Entered and Cleared at the Port of *Liverpool* in the Trade with Foreign Countries and British Colonies, in each Year from 1848 to 1873 (with Cargoes and in Ballast).

YEAR.	Europe (generally).			Asia (generally) (including East Indies, Hong Kong, and Australian Colonies).			Africa (generally).			North America (including United States and British and North American Possessions).			Central and Southern America (including West Indies).			Other Countries.			Total Trade.		
	British.	Foreign.	Total.	British.	Foreign.	Total.	British.	Foreign.	Total.	British.	Foreign.	Total.	British.	Foreign.	Total.	British.	Foreign.	Total.	British.	Foreign.	Total.
	Tons.	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*	*Tons.*
1848 - -	314,957	198,764	513,721	208,986	7,368	216,354	91,802	1,393	93,195	915,986	884,877	1,800,863	291,054	15,987	307,041	–	–	–	1,822,785	1,108,389	2,931,174
1849 - -	359,523	201,520	561,043	233,229	2,622	235,851	111,394	3,778	115,172	1,058,394	894,916	1,953,310	351,540	20,272	371,812	–	–	–	2,114,080	1,123,108	3,237,188
1850 - -	356,226	300,790	657,016	272,643	5,630	278,273	108,830	18,303	127,133	830,384	959,323	1,789,707	372,572	37,248	409,820	304	–	304	1,940,959	1,321,294	3,262,253
1851 - -	373,716	288,654	662,370	296,179	17,660	313,839	108,833	33,866	142,699	901,226	1,183,326	2,084,562	362,562	48,631	411,193	–	–	–	2,042,526	1,572,137	3,614,663
1852 - -	390,019	264,340	654,359	304,425	33,298	337,723	109,245	33,297	142,542	1,038,688	1,227,433	2,266,121	343,243	42,609	385,852	–	–	–	2,185,620	1,600,977	3,786,597
1853 - -	400,992	371,675	772,667	384,891	56,127	441,018	112,709	34,559	147,268	1,061,691	1,341,731	2,403,422	314,512	76,326	390,838	–	–	–	2,274,795	1,880,418	4,155,213
1854 - -	381,167	268,315	649,482	436,140	41,060	477,200	129,443	17,758	147,201	1,073,881	1,551,757	2,625,638	374,907	76,506	451,413	735	–	735	2,396,273	1,955,396	4,351,669
1855 - -	480,781	340,199	820,980	516,121	85,788	601,909	144,948	21,425	166,373	669,843	1,619,249	2,289,092	343,795	73,873	417,668	874	316	1,190	2,156,362	2,140,850	4,297,212
1856 - -	590,176	312,177	902,353	609,640	81,107	690,747	166,293	12,783	179,076	1,026,859	1,834,634	2,861,493	347,286	115,484	462,770	380	487	867	2,740,634	2,356,672	5,097,306
1857 - -	587,337	355,531	942,868	716,777	139,856	856,633	152,972	18,045	171,017	909,764	1,526,707	2,436,471	400,091	126,853	526,944	782	1,165	1,947	2,767,723	2,168,157	4,935,880
1858 - -	546,618	351,175	897,793	585,332	99,448	684,780	152,508	28,206	180,714	865,763	1,605,033	2,470,796	392,647	115,262	507,909	1,029	241	1,270	2,543,897	2,199,365	4,743,262
1859 - -	603,496	415,975	1,019,471	653,144	92,530	745,674	166,843	23,330	190,173	1,015,674	1,455,318	2,470,992	370,637	124,519	495,206	645	1,108	1,753	2,810,489	2,112,780	4,923,269
1860 - -	609,405	309,877	919,282	627,586	143,181	770,767	190,956	23,918	214,874	1,287,630	1,929,723	3,217,353	389,520	160,359	549,879	–	758	758	3,105,097	2,567,816	5,672,913
1861 - -	631,034	306,505	937,539	729,820	135,649	865,469	173,010	30,925	203,935	1,535,118	1,814,762	3,349,880	422,683	170,865	592,948	291	1,047	1,338	3,491,356	2,459,753	5,951,109
1862 - -	693,253	309,401	1,002,654	788,250	111,008	899,258	192,457	13,594	206,051	1,278,313	1,255,845	2,534,158	462,683	163,892	626,575	–	618	618	3,414,956	1,854,358	5,269,314
1863 - -	760,614	294,256	1,054,870	886,779	82,587	969,366	237,899	13,663	251,562	1,647,548	710,869	2,358,417	532,913	133,602	666,515	205	1,188	1,393	4,065,958	1,236,165	5,302,123
1864 - -	791,344	311,102	1,102,446	1,001,126	49,664	1,050,790	300,638	14,549	315,187	1,523,076	532,244	2,055,320	682,276	143,535	825,811	1,007	895	1,902	4,299,467	1,051,989	5,351,456
1865 - -	833,759	327,551	1,161,310	796,684	26,240	822,924	408,130	13,034	421,164	1,610,617	384,632	1,995,249	736,038	139,625	875,663	–	338	338	4,385,228	891,420	5,276,648
1866 - -	881,748	325,169	1,206,917	905,282	39,474	944,756	316,713	8,723	325,436	2,083,829	693,994	2,777,823	684,411	151,916	836,327	352	–	352	4,872,335	1,219,276	6,091,611
1867 - -	984,619	321,342	1,305,961	943,717	55,712	999,429	428,958	8,200	437,158	2,104,547	660,439	2,764,986	700,649	148,854	849,503	–	–	–	5,162,490	1,194,547	6,357,037
1868 - -	981,852	286,031	1,267,883	933,371	95,941	1,029,312	483,805	13,482	497,287	2,170,127	620,648	2,790,775	652,328	202,409	854,737	–	–	–	5,221,483	1,218,511	6,439,994
1869 - -	1,037,283	333,303	1,370,586	869,197	69,526	938,723	442,814	16,707	459,521	2,422,292	525,391	2,947,683	648,167	180,780	828,947	304	–	304	5,420,057	1,125,707	6,545,764
1870 - -	1,092,074	384,069	1,476,143	723,028	46,825	769,853	425,635	10,402	436,037	2,489,777	689,209	3,178,986	693,160	204,448	897,608	7,323	7,121	14,444	5,430,997	1,342,074	6,773,071
1871 - -	1,200,130	397,935	1,598,065	843,326	71,932	915,258	487,679	27,566	515,245	3,084,912	938,200	4,023,112	769,294	232,615	1,001,909	5,489	3,881	9,370	6,390,830	1,672,129	8,062,959
1872 - -	1,314,203	392,323	1,706,526	829,675	87,039	916,714	471,653	28,365	500,018	3,194,745	570,314	3,765,059	935,120	268,092	1,203,212	5,232	7,695	12,927	6,750,628	1,353,828	8,104,456
[illegible]	[illegible]	[illegible]	[illegible]	768,858	87,002	855,860	408,350	20,435	428,785	3,421,285	878,202	4,299,487	964,528	274,864	1,239,392	2,583	2,694	5,277	6,878,136	1,669,509	8,547,645

TABLE, No. 20.

Apprentices.

Number of Apprentices' Indentures Enrolled, and the Number Cancelled in each Year, from 1845 to 1874.

Year.	Number Enrolled.	Cancellations, Deaths, and Expirations.	Year.	Number Enrolled.	Cancellations, Deaths, and Expirations.
1845	15,704	7,412	1859	5,773	7,755
1846	10,376	6,928	1860	5,616	7,404
1847	11,521	7,041	1861	5,836	6,650
1848	11,440	7,762	1862	5,880	5,588
1849	9,659	10,540	1863	5,636	5,807
1850	5,055	10,270	1864	5,520	5,925
1851	5,275	10,597	1865	5,638	5,529
1852	5,845	10,487	1866	5,454	5,705
1853	6,828	9,333	1867	5,444	5,611
1854	7,935	5,682	1868	4,975	5,754
1855	7,461	5,712	1869	4,613	5,553
1856	7,410	6,084	1870	4,241	5,495
1857	6,850	7,092	1871	4,111	5,322
1858	5,578	7,676	1872	4,360	4,913
			1873	4,045	4,769
			1874	4,445	4,448

Note.—It appears by the Official Records that—
On the 31st December 1870 there were 18,303 Indentures in existence.
On the 31st December 1871 " " 17,092 " "
On the 31st December 1872 " " 16,539 " "
On the 31st December 1873 " " 15,815 " "
On the 31st December 1874 " " 15,812 " "

TABLE, No. 21.

Seamen's Wages.

Rates of Wages of Able Seamen in various Trades, in the Ports of [illegible]

Ports.	Voyages to	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Bristol	Mediterranean	50 –	45 –	45 –	45 –	50 –	55 –	80 –	65 –	65 –	50 –	50 –	50 –	50 –	55 –	55 –
	North America	50 –	45 –	45 –	50 –	50 –	50 –	70 –	70 –	55 –	55 –	55 –	55 –	50 –	55 to 65/	55 to 65
	South America	45 –	45 –	45 –	50 –	45 –	45 –	60 –	65 –	60 –	50 –	47 6	50 –	50 –	52 6	52 6
	Coast of Africa	50 –	50 –	50 –	50 –	50 –	50 –	60 –	60 –	50 –	50 –	50 –	50 –	50	50 –	50 –
	East Indies and China	45 –	45 –	–	45 –	50 –	40 –	60/ to 70/	60 –	50 –	– –	45 –	– –	– –	50 –	50 –
	Australia	40 –	40 –	40 –	–	50 –	50 –	60 –	65 –	60 –	50 –	45 –	50 –	– –	50 –	50 –
Glasgow	Mediterranean	45 –	45 –	45 –	50 –	55 –	55 –	75 –	70 –	70 –	60 –	60 –	55 –	55 –	60 –	60 –
	North America	50 –	50 –	50 –	55 –	50 –	70/ to 75/	90 –	80 –	65 –	70 –	70 –	55 –	70 –	65 –	65 –
	South America	45 –	50 –	45 –	45 –	50 –	60 –	70/ to 75/	65 –	55 –	60 –	55 –	55 –	50 –	55 –	55 –
	Coast of Africa	–	–	45 –	45 –	–	– –	70 –	70 –	65 –	– –	– –	60 –	55 –	60 –	60 –
	East Indies and China	45 –	45 –	45 –	45 –	45 –	65 –	– –	60 –	65 –	65 –	50 –	60 –	50 –	55 –	55 –
	Australia	45 –	45 –	45 –	45 –	45 –	60/ to 80/	70 –	65 –	60 –	– –	50 –	60 –	55 –	55 –	55 –
Liverpool	Mediterranean	45 –	45 –	50 –	45 –	45 –	50 –	80 –	60 –	80 –	65 –	60 –	55 –	50 –	50 to 55/	
	North America	50 –	50 –	50 –	50 –	50 –	75 –	70 –	60 –	65 to 70/	80 –	55 –	65 –	60 –	55 to 60/	
	South America	45	45 –	45 –	50 –	45 –	50 –	60 –	75 –	75 –	55 –	50 –	50 –	50 –	50 –	55 –
	Coast of Africa	45 –	45 –	40 –	45 –	45 –	45 –	45 –	60 –	70 –	50 –	45 –	50 –	50 –	50 to 55/	50 –
	East Indies and China	40 –	45 –	40/ to 45/	45 –	45 –	40 –	45 –	55 –	60 –	60 –	45 –	50 –	50 –	45/ to 50/	50 to 55
	Australia	45 –	40 –	45 –	45 –	50 –	60 –	60 –	70/ to 80/	70 –	55 –	45 –	45 –	50 –	45 to 50/	45 to 50
London	Mediterranean	45 –	47 6	45 –	45 –	45 –	50, to 60/	60 –	65 –	60 –	50 –	45 –	50 –	50 –	52 6	52 6
	North America	55 –	55 –	50 –	50 –	50 –	65/ to 70/	65 –	70 –	62 6	55 –	52 –	55/ to 60/	55/ to 60/	60 –	50 to 60
	South America	45 –	45 –	45 –	45 –	45 –	50 –	60 –	65 –	62 6	51	45 –	50 –	50 –	50 –	50 –
	Coast of Africa	45 –	45 –	45 –	45 –	45 –	50 –	60	75 –	60 –	50 –	48 6	50 –	50 –	50 –	50 –
	East Indies and China	40 –	40 –	40 –	40 –	40 –	45, to 50/	60 –	65 –	60 –	50 –	45 –	50 –	50 –	45 to 50	50 –
	Australia	40 –	40 –	40 –	40 –	55 –	1/ to 80/	75 –	60 –	55 –	50 –	47 –	50 –	50 –	50 –	50 –
Newcastle and Shields	Mediterranean	55 –	55 –	50 –	50 –	50 –	50 –	90 –	70 –	90 –	60 –	50 –	50 –	60 –	57 6 to 60	55 to 60
	North America	60 –	60 –	57 6	55	60 –	70 –	90 –	90 –	80 –	70 –	55 –	55 –	70 –	65	65 –
	South America	45 –	52 6	45 –	42 6	45 –	45 –	70 –	70 –	70 –	55 –	50 –	45 –	60 –	50 –	52 6
	Coast of Africa	50 –	45 –	– –	–	–	– –	55 –	– –	– –	– –	– –	– –	– –	60 –	55 –
	East Indies and China	45 –	45 –	45 –	42 6	42 6	45 –	50 –	70 –	55 –	55 –	45 –	45 –	50 –	50 –	50 –
	Australia	–	–	– –	–	45 –	60 –	50 –	– –	– –	– –	50 –	– –	– –	50 –	50 –

TABLE, No. 21.

Seamen's Wages.

n each Year from 1848 to 1874.

	1865.	1866.*	1867.	1868.	1869.		1870.		1871.		1872.†		1873.		1874.	
					Sailing.	Steam.	Sailing.	Steam.	Sailing.	Steam.	Sailing.	Steam.	Sailing.	Steam.	Sailing.	Steam.
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*	*s. d.*
	55 to 60	55 –	55 –	55 –	55 –	60 to 65	55 –	60 to 75	55 –	67 6	65 –	80 –	65/ to 75/	80 –	70 –	80 –
	55 to 65	60 to 65	60 to 70	55 to 65	55 to 60	55 to 60	55 to 60	55 to 65	– –	55 to 60	70 –	80 –	80/ to 90/	80 –	75/ to 80/	80 –
	52 6 to 55	55 to 60	55 to 60	55 –	55 –	50 to 55	– –	50 to 55	– –	50 to 55	– –	60/ to 65/	70 –	– –	70 –	—
	50 to 55	55 to 60	55/ to 57 6	52 6 to 55/	55 –	55 –	– –	55 –	– –	55 –	– –	60 –	70 –	– –	70 –	—
	50	50 to 55/	52 6 to 55/	50 to 55	50 –	50 to 52 6	– –	50 –	– –	47 6	– –	60/ to 65/	70 –	– –	65/ to 70/	—
	– (*a*) –	– (*a*) –	– (*a*) –	52 6	50 to 52 6	– –	50 –	– –	– –	– –	– –	– –	70 –	—	—	—
	65 –	80 –	62 6	60 –	60 –	65 –	60 –	65 –	65 –	65 –	70 –	80 –	70/ to 75/	80 –	70 –	80 –
	80 –	80 –	80 –	80 –	70 to 80	80 –	70/ to 80/	80 –	80 –	80 –	90 –	90 –	90 –	90 –	90 –	90 –
	60 –	60 –	60 –	60 –	55/ to 60/	65 –	55/ to 60/	65 –	55 –	60 –	70 –	70 –	70 –	80 –	70 –	80 –
	60 –	60 –	60 –	65 –	55/ to 60/	65 –	55/ to 60/	65 –	60 –	60 –	70 –	70 –	70 –	80 –	70 –	80 –
	60 –	60 –	60 –	60 –	55 –	65 –	55 –	65 –	55 –	80 –	70 –	80 –	70 –	80 –	70 –	80 –
	60 –	60 –	60 –	60 –	55 –	– –	55 –	– –	55 –	– –	70 –	– –	70 –	80 –	70 –	75 –
	55 to 60	55 –	55/ to 60/	55/ to 60/	50/ to 55/	50 –	60 –	50 –	60 –	50 –	60/ to 70/	60 –	60/ to 70/	60 –	70 –	60 –	70 –
	75 to 86	70 to 80	70/ to 85/	60/ to 80/	60/ to 70/	65 –	80 –	65 –	80 –	65/ to 80/	80 –	70/ to 90/	80/ to 90/	90 –	90 –	90 –	90 –
	50 to 55/	55 –	50/ to 60/	50 –	50 –	60 –	50 –	60 –	50 –	60 –	60 –	60/ to 70/	60 –	65 –	60 –	70 –
	50 –	50 –	50 –	50 –	50 –	55 –	50 –	55 –	50 –	55 –	60 –	55/ to 60/	55 –	60 –	60 –	60 –
	50 –	55 –	50/ to 55/	50 –	50 –	55 –	50 –	55 –	50 –	60 –	60 –	60/ to 65/	60 –	60 –	60 –	60 –
	50 –	50 –	50/ to 55/	50 –	50 –	55 –	50 –	55 –	50 –	55 –	55/ to 60/	60 –	60 –	60 –	60 –	65 –
52 6	52 6	52 6 to 70/	50 –	50 –	50/ to 55/	60/ to 70/	50/ to 55/	60/ to 70/	55 –	67 6	60 –	65/ to 70/	65/ to 70/ §	70/ to 75/	65/ to 70/ §	70/ to 75/
55 to 60	60 to 65/	55/ to 75/	55 to 65/	55/ to 65/	55/ to 70/	70/ to 80/	55/ to 70/	70 to 80/	60 –	80 –	65/ to 70/	80/ to 90/ ‡	70/ to 80/	80/ to 90/	65/ to 80/	90 –
50 –	50 to 55/	50/ to 70/	50 –	50 –	50 –	60/ to 65/	50 –	60/ to 65/	50 –	60 –	60 –	67 6	65 –	70 –	65 –	70 –
50 to 52 6	50 –	50 to 65/	50/ to 55/	50 –	– –	– –	50 –	– –	50 –	65 –	60 –	70 –	65/ to 70/	80 –	65/ to 70/	80 –
50 –	50/ to 70/	50 –	50 –	50 –	60/ to 65/	50 –	60/ to 65/	50 –	70 –	60 –	70 –	65 –	70 –	65 –	70 –
50 to 55	50 –	50/ to 70/	50 –	50 –	50 –	50 –	50 –	50 –	50 –	60 –	60 –	70 –	65 –	65/ to 70/	65 –	65/ to 70/
57 6 to 60/	65 –	65 –	60 –	55/ to 60/	50/ to 57/6	70 –	57 6	70 –	60 –	70 –	62/6 to 70/	72/6 to 75/	70/ to 75/	77/6 to 85/	70/ to 80/	80/ to 90/ ‖
65 –	75 –	80 –	70 –	65 –	55/ to 60/	70 –	60/ to 65/	70 –	60/ to 75/	– –	70/ to 80/	80 –	70/ to 85/	80/ to 100/	80/ to 95/ ‡	85/ to 95/
	55/ to 65	60/ to 62/6	60 –	55 –	50/ to 55/	– –	50/ to 55/	– –	52/6 to 70/	70 –	55/ to 65/	70 –	60/ to 75/	– –	60/ to 75/	—
	57 6	57 6	55 –	(*b*)	55 –	27/ per week.	57/6 to 60/	28/ per week.	55/ to 60/	28/ to 30/ per week.	55/ to 65/	70/ to 75/	75 –	77/6 to 100/	65/ to 72/6	80/ to 100/ ‖
	55 –	60 –	55 –	52 6	45/ to 50/	60 –	50/ to 55/	60 –	52 6 to 55/	75 –	55/ to 60/	70/ to 75/	60/ to 80/	75/ to 80/	60/ to 65/	80/ to 85/
55 –	55 –	60 –	55 –	52 6	50 –	– –	50 –	– –	52 6 to 55/	75 –	55/ to 60/	75 –	60/ to 65/	80 –	70 –	—

* The high rate of wages in 1866 was in consequence of the seamen's strike.

† General rise in wages in June 1872.

‡ Wages 10*s.* less when an advance note is given.

§ The superintendent at Poplar reports that there has been a very limited supply of men throughout the year. Masters have managed to fill up their crews (sometimes with difficulty), but have had no choice.

‖ 1*l.* 10*s.* to 1*l.* 12*s.* 8*d.* per week, without provisions.

(*a*) No vessels employed in the Australian trade out of Bristol for the years 1865, 1866, and 1867. (*b*) No vessels employed in the Coast of Africa trade out of Newcastle or Shields in the year 1868.

TABLE, No. 22.

Seamen (British and Foreign).

Numbers of British and Foreign Seamen serving in Registered Sailing and Steam Vessels of the *United Kingdom* (exclusive of River Steamers), employed in the Home and Foreign Trade, showing the Proportions of Foreign to British Seamen, from 1851 to 1873.

(Masters are not included in this Return.)

YEAR.	Number of British Seamen Employed.	Number of Foreign Seamen Employed.	Total Number of Seamen Employed.	Per-centage of Foreign to British Seamen Employed.
1851 - - -	136,144	5,793	141,937	4·2
1852 - - -	153,863	5,700	159,563	3·7
1853 - - -	165,205	7,321	172,526	4·4
1854 - - -	149,215	*13,200	162,415	8·8
1855 - - -	155,610	12,927	168,537	8·3
1856 - - -	160,597	13,321	173,918	8·3
1857 - - -	162,012	14,375	176,387	8·9
1858 - - -	165,498	12,334	177,832	7·4
1859 - - -	160,210	12,296	172,506	7·6
1860 - - -	157,312	14,280	171,592	9·
1861 - - -	- - Not separated - -		171,957	—
1862 - - -	157,767	16,096	173,863	10·2
1863 - - -	165,794	18,933	184,727	11·4
1864 - - -	173,833	21,923	195,756	12·6
1865 - - -	177,363	20,280	197,643	11·4
1866 - - -	- - Not separated - -		196,371	—
1867 - - -	174,523	21,817	196,340	12·5
1868 - - -	177,239	20,263	197,502	11·4
1869 - - -	175,332	20,158	195,490	11·4
1870 - - -	177,951	18,011	195,962	10·1
1871 - - -	181,973	17,765	199,738	9·76
1872 - - -	183,129	20,591	203,720	11·24
1873 - - -	182,399	19,840	202,239	10·87

* The nationality of these was as follows:—

American (U. S.) - - -	3,888	Prussians - - -	563
Austrians - - -	532	Russians - - -	44
Belgians - - -	198	Spaniards - - -	388
Danes - - - -	428	Swedes - - - -	1,512
Germans - - - -	319	French - - - -	479
Greeks - - - -	76	Various, viz., South Americans, Chinese, &c.	2,499
Hollanders - - -	1,030		
Italians - - - -	110		
Norwegians - - -	570		
Portuguese - - -	564		13,200

STATEMENT showing the TONNAGE of REGISTERED SAILING and STEAM VESSELS (exclusive of River Steamers) belonging to the United Kingdom employed in the Home and Foreign Trades in [illegible] years 1869 to 1873; and the Number of Men (exclusive of Masters) employed therein; and showing the Proportion of Men to every 100 Tons in each Trade and Class of Vessel.

TRADES IN WHICH EMPLOYED.	Year.	SAILING SHIPS.			STEAM VESSELS.			TOTAL.		
		Tons.	Men.	Proportion of Men to 100 Tons.	Tons.	Men.	Proportion of Men to 100 Tons.	Tons.	Men.	Proportion of Men to 100 Tons.
In the Home Trade	1854	694,712	34,510	4·97	54,002	3,840	7·11	748,714	38,350	[illegible]
	1869	776,683	39,481	5·08	161,984	10,049	6·20	938,667	49,530	[illegible]
	1870	766,742	40,265	5·25	170,746	11,445	6·7	937,188	51,710	[illegible]
	1871	777,185	41,828	5·38	195,125	12,613	6·46	972,310	54,441	[illegible]
	1872	794,162	42,095	5·30	208,490	13,238	6·35	1,002,652	55,333	[illegible]
	1873	749,345	39,540	5·28	215,263	13,243	6·15	964,608	52,883	[illegible]
Partly in the Home and partly in the Foreign Trade	1854	202,124	8,099	4·01	19,135	1,328	6·94	[illegible]	9,427	[illegible]
	1869	288,849	10,265	3·55	73,064	3,048	4·12	362,813	13,313	3·66
	1870	283,682	9,988	3·52	108,813	4,221	3·87	392,495	14,209	3·62
	1871	286,803	10,060	3·51	157,964	5,767	3·65	444,767	15,827	3·56
	1872	245,568	8,580	3·49	121,337	4,605	3·80	366,900	13,185	3·59
	1873	244,067	7,951	3·26	97,445	3,347	3·43	[illegible]	11,228	3·75
In the Foreign Trade	1854	2,619,620	103,913	3·97	139,500	10,726	7·69	2,759,120	114,639	4·15
	1869	3,611,743	102,440	2·83	644,080	30,207	4·68	4,255,823	132,647	3·11
	1870	3,468,717	96,054	2·79	760,410	33,089	4·35	4,229,127	130,043	3·07
	1871	3,279,570	89,147	2·72	936,914	40,323	4·30	4,216,484	129,470	3·07
	1872	3,206,179	86,426	2·70	1,185,877	48,776	4·11	4,392,056	135,202	3·08
	1873	3,113,132	83,766	2·69	1,368,245	54,302	3·97	4,481,377	138,068	3·08
TOTAL	1854	3,516,456	146,522	4·17	212,637	15,894	7·47	3,729,093	162,416	4·36
	1869	4,677,275	152,186	3·25	979,128	43,304	4·42	[illegible]	195,490	3·51
	1870	4,519,141	147,207	3·25	1,039,969	48,755	4·67	5,559,110	195,962	3·52
	1871	4,343,558	141,035	3·25	1,290,003	58,703	4·55	5,633,561	199,738	3·55
	1872	4,245,909	137,101	3·22	1,515,704	66,619	4·41	[illegible]	203,720	[illegible]
	1873	4,067,144	130,877	3·22	1,680,953	71,362	4·24	5,748,097	202,239	3·52

TABLE, No. 24.

Analysis of Crews of Merchant Ships

COMPARATIVE TABLE showing the Constitution of the Crews of certain British Vessels

1849.

VESSEL'S NAME.	Official Number	PORT.	Tons.	OWNERS.	Description of Voyage.	Masters.	Mates.	Boatswains.	Quarter-masters.	Carpenters.	Sailmakers.	Able Seamen.	Ordinary Seamen.	Apprentices.	Boys.	Other Persons.	Total Crew.	Total Foreigners.
Alfred	26,614	London	1,291	R. Green and Co.	London to Calcutta	5	6	3	1	2	1	41	7	5	5	14	90	7
Earl Balcarras	21,963	ditto	1,488	J. and F. Somes	London to Bombay	4	4	3	2	2	1	38	7	5	3	6	70	10
Devonshire	24,803	ditto	806	M. Wigram and Co.	London to Madras	3	3	2	1	2	1	16	6	3	1	8	46	1
Pascoe Grenfell	14,174	ditto	348	F. Ridley	London to Cuba	2	1	1	1	1	1	8	2	2	1	1	14	1
Sea Park	14,738	ditto	895	D. Dunbar	London to Calcutta	4	3	2	1	2	1	12	4	3	1	5	35	3
Elizabeth	22,390	Newcastle	280	J. Young & Others	London to Quebec	1	–	–	–	1	–	3	1	4	–	1	10	1
Earl of Aberdeen	3,655	ditto	230	T. & W. Smith	Shields to Baltic	2	–	–	–	1	–	4	1	3	–	–	10	–
Lord Brougham and Vaux	6,928	ditto	293	S. Hewson	Shields to Baltic	1	–	–	–	1	–	5	1	3	–	–	10	–
Indus	25,789	Liverpool	419	C. Ironside	Liverpool to Rio Janeiro	2	–	1	–	1	–	11	2	3	–	2	22	4
Crisis	1,203	ditto	401	L. & J. Brocklebank	Liverpool to Shanghai	3	–	–	–	1	–	6	–	6	–	2	18	1
Eleanor Dixon	1,202	ditto	405	W. Wilson & Others	Liverpool to Calcutta	2	–	–	–	1	–	7	2	4	–	2	18	3
Tigris	1,079	ditto	450	T. & R. Brocklebank	Liverpool to Calcutta	3	–	–	–	1	–	10	–	6	–	2	22	–
Parker	24,017	ditto	440	W. R. Sandback	Liverpool to West Indies	2	–	1	–	1	1	13	–	5	–	3	26	2
Patriot Queen	1,694	ditto	509	T. & J. Brocklebank	Liverpool to Calcutta	3	–	1	–	1	–	11	–	6	–	2	24	1
England	8,523	ditto	724	J. Jarvie & Others	Liverpool to South America	2	–	–	–	1	1	9	1	5	–	3	23	1
Helen Wallace	10,220	ditto	641	J. Steel	Liverpool to Calcutta	3	–	–	–	1	–	12	2	4	–	2	24	1
Endymion	20,069	ditto	619	Cotesworth, Lyne, and Co.	Liverpool to Calcutta	2	–	–	–	1	–	12	5	2	–	2	24	–
Thomas Brocklebank	6,993	ditto	588	T. & J. Brocklebank	Liverpool to Calcutta	3	–	–	–	2	1	11	–	8	–	2	27	2
Marian	1,876	ditto	619	C. W. & E. Shand	Cork to Bombay	2	–	1	–	1	1	13	2	6	–	3	29	4
City of Glasgow	27,180	Glasgow	596	G. Smith & Sons	Glasgow to Calcutta	3	–	–	–	1	–	32	–	4	–	3	32	3
Achilles	34,777	ditto	601	A. Gilmour & Co.	Liverpool to Quebec	2	–	1	–	2	1	12	1	4	–	2	25	2
Adept	32,840	ditto	1,102	ditto	Liverpool to Quebec	3	–	1	–	2	1	25	–	8	–	2	42	2
Acme	32,904	ditto	1,119	ditto	Liverpool to Quebec	3	–	1	–	1	–	26	–	6	–	3	40	3
Adam Carr	7,520	ditto	353	R. & — Murray & Others	Glasgow to New York	2	–	–	–	1	–	7	1	2	–	3	16	2
William Stewart	9,073	Greenock	570	R. Millar & Others	London to China	2	–	1	–	1	1	13	–	–	–	2	20	2
Eliza Stewart	26,793	ditto	524	ditto	Liverpool to Calcutta	2	–	–	–	1	1	12	–	5	–	2	23	1
Cumbria	32,848	ditto	390	W. Orr	Glasgow to Canada	2	–	1	–	1	–	10	3	1	–	2	20	–
Menam	17,037	ditto	472	P. Maxton	London to China	2	–	–	–	1	–	8	1	–	–	2	14	1
Tamerlane	20,470	ditto	427	W. Stewart	Liverpool to Calcutta	2	–	–	–	1	1	9	1	4	–	2	20	1
Champion	25,519	ditto	746	R. Cuthbert	Glasgow to Quebec	2	–	–	–	1	1	13	2	6	–	3	27	1
Berhampore	14,521	Hull	653	Ed. Gibson	London to New Zealand	3	–	1	–	1	–	14	4	4	–	4	31	–
Royal Victoria	1,060	ditto	679	J. Rylands	Hull to America	2	–	–	–	1	–	14	–	3	–	1	21	–
William Darley	5,432	ditto	478	W. Brownlow and Others	Hull to Bombay	2	–	–	–	1	–	8	1	3	–	1	16	–
Minerva	7,772	Bristol	380	Miles and Kingston	Bristol to West Indies	2	–	1	–	1	–	9	3	–	3	2	21	–
Helen	4,090	ditto	289	W. Cook	London to West Indies	2	–	–	–	1	–	7	–	2	–	1	13	2
Ocean Queen	4,056	ditto	602	W. & J. Yeo	Liverpool to North America	2	–	1	–	1	1	9	–	4	–	1	19	–
Jessy	39,936	ditto	156	W. Cook	Liverpool to West Indies	2	–	–	–	1	–	3	–	2	–	1	8	–
Ajax	4,062	ditto	393	Miles & Co.	Bristol to West Indies	2	–	1	–	2	–	7	1	3	1	2	19	–
Eliza Pirrie	7,031	Belfast	598	J. & T. Sinclair	Liverpool to Bombay	2	–	–	–	1	1	7	–	5	–	2	18	1
Victoria	25,425	Plymouth	205	J. Gent	Plymouth to West Indies	2	–	–	–	1	–	4	–	2	–	1	10	–
William Bromham	5,662	ditto	401	J. Bromham	Southampton to Quebec	2	–	–	–	1	–	9	–	4	–	1	17	–
Gentoo	22,282	ditto	381	ditto	Milford to Quebec	2	–	1	–	1	–	9	–	2	–	1	16	1
Vanilla	6,768	Yarmouth	230	H. Jay	Liverpool to South America	1	–	–	–	1	–	4	–	2	–	1	9	–
William Barber	25,988	ditto	230	T. Barber	London to Odessa	1	–	–	–	–	–	4	2	3	–	1	11	–
England's Queen	2,100	Shields	314	S. Meane	Shields to Hamburg	2	–	–	–	1	–	2	–	5	–	1	11	–
Golden Grove	14,176	ditto	308	R. Popplewell	Shields to Baltic	1	–	–	–	1	–	2	–	5	–	1	11	–
Elizabeth	22,859	ditto	236	L. Hardmash	Newcastle to Malta	1	–	–	–	–	–	2	–	5	–	1	9	–
Jane	3,512	ditto	235	R. Popplewell	Shields to Baltic	1	–	–	–	1	–	2	–	5	–	1	10	–
Prince Regent	5,394	Hull	394	W. Sharp	Hull to Quebec	2	–	–	–	1	1	6	–	2	–	3	1	–
William Bromham	5,662	Plymouth	491	J. Bromham	Plymouth to Africa	2	–	–	–	1	–	8	–	4	–	1	16	–
Copia	40,109	Greenock	301	Patten & Co.	Greenock to West Indies	2	–	–	–	–	–	6	–	4	–	2	14	–
Culdee	7,405	ditto	387	J. Cunningham	Glasgow to Ceylon	2	–	–	–	1	1	6	–	4	–	5	19	–
Chieftain	22,911	ditto	389	D. M'Larty	Liverpool to China	2	–	–	–	1	1	6	2	3	–	2	17	–
Champion	25,519	ditto	746	R. Cuthbert	Greenock to Mobile	2	–	–	–	1	1	14	2	5	–	2	27	3

TABLE, No. 24.

Analysis of Crews of Merchant Ships,

employed in the Foreign Trade of the United Kingdom, in the Years 1849, 1859, and 1869.

	OWNERS.	Description of Voyage.	1849 Masters.	Mates, incl. Shipmen.	Boatswains.	Quartermasters.	Carpenters.	Sailmakers.	Able Seamen.	Ordinary Seamen.	Apprentices.	Boys.	Other Persons.	Total Crew.	Total Foreigners.
1	Same owners	London to Calcutta	5	7	3	1	2	1	30	9	1	7	14	79	10
2	ditto	London to Bombay	4	4	3	4	2	1	30	6	5	4	8	63	2
3	ditto	London to Calcutta	3	2	1	1	1	1	18	4	1	1	4	38	1
4	ditto	London to Cuba	1	1	1	1	1	1	6	3	1	1	2	14	2
5	ditto	London to Matanzas	4	1	1	1	1	1	14	5	3	1	4	32	2
6	ditto	Shields to Baltic	1	1	1	1	1	1	3	1	3	1	1	9	1
7	ditto	Shields to Cadiz	1	1	1	1	1	1	3	1	2	1	1	10	1
8	ditto	Shields to Mediterranean	1	1	1	1	1	1	4	1	3	1	1	10	1
9	ditto	Port Glasgow to Bahia	1	1	1	1	1	1	8	1	1	1	2	15	1
10	ditto	Liverpool to Singapore	3	1	1	1	1	1	6	2	3	1	2	17	2
11	ditto	Liverpool to Lima	1	1	1	1	1	1	5	1	5	1	2	17	2
12	ditto	Liverpool to Singapore	3	1	1	1	1	1	10	1	3	1	2	26	6
13	ditto	Liverpool to West Indies	2	1	1	1	1	1	7	1	5	1	3	22	1
14	ditto	Liverpool to Calcutta	3	1	1	1	1	1	9	1	8	1	2	24	1
15	ditto	Liverpool to New Orleans	1	1	1	1	1	1	11	3	1	1	2	20	3
16	ditto	Liverpool to Sydney	2	1	1	1	1	1	8	3	1	1	2	19	3
17	ditto	Liverpool to Singapore	2	1	1	1	1	1	8	1	4	1	2	19	1
18	ditto	Liverpool to Calcutta	3	1	1	1	1	1	11	1	7	1	2	25	3
19	ditto	Liverpool to West Indies	3	1	1	1	1	1	10	2	3	1	2	23	4
20	ditto	Glasgow to Calcutta	2	1	1	1	1	1	12	1	3	1	2	19	3
21	ditto	London to New Orleans	1	1	2	1	1	1	9	1	1	1	2	14	2
22	ditto	Liverpool to Quebec	3	1	1	1	2	1	24	2	1	1	2	35	6
23	ditto	Liverpool to America	1	1	2	1	2	2	19	8	1	1	2	36	8
24	ditto	Liverpool to Africa	1	1	1	1	1	1	6	2	1	1	1	12	3
25	ditto	Greenock to Singapore	2	1	1	1	1	1	10	1	3	1	1	19	2
26	ditto	London to Sydney	1	3	1	1	1	1	8	2	2	1	2	21	1
27	ditto	Glasgow to New York	1	1	1	1	1	1	9	1	1	1	2	16	1
28	W. Martin	Glasgow to Singapore	2	1	1	1	1	1	10	2	1	1	2	17	1
29	Same owner	Belfast to Quebec	1	1	1	1	1	1	6	1	1	1	1	10	1
30	ditto	Greenock to Quebec	1	1	1	1	1	1	12	3	2	1	2	22	1
31	ditto	London to Bombay	1	1	1	1	1	1	9	4	1	1	2	20	2
32	ditto	Liverpool to Quebec	2	1	1	1	1	1	10	1	1	1	2	17	4
33	ditto	Cardiff to Baltic	1	1	1	1	1	1	7	2	1	1	2	14	3
34	ditto	Bristol to West Indies	1	1	1	1	1	1	8	2	1	1	1	14	2
35	ditto	London to West Indies	1	1	1	1	1	1	3	2	2	1	2	13	1
36	ditto	Appledore to Quebec	1	1	1	1	1	2	9	3	1	1	1	18	1
37	ditto	London to West Indies	1	1	1	1	1	1	4	1	1	1	1	8	3
38	ditto	Cardiff to Mediterranean	1	1	1	1	1	1	6	2	1	1	1	12	3
39	ditto	Liverpool to Canada	1	1	1	1	1	1	7	4	1	2	2	18	1
40	ditto	Plymouth to Mediterranean	1	1	1	1	1	1	3	2	1	1	1	8	1
41	ditto	Plymouth to Africa	1	1	1	1	1	1	6	3	1	2	2	16	1
42	ditto	Plymouth to Quebec	1	1	1	1	1	1	8	1	1	1	2	13	2
43	ditto	Yarmouth to Mediterranean	1	1	1	1	1	1	3	4	1	1	1	11	2
44	ditto	Yarmouth to Black Sea	1	1	1	1	1	1	3	2	1	1	1	9	1
45	ditto	Shields to North America	1	1	1	1	1	1	3	1	3	1	1	10	1
46	ditto	Shields to North America	1	1	1	1	1	1	4	1	3	1	1	11	1
47	ditto	Troon to Mediterranean	1	1	1	1	1	1	4	2	1	1	1	9	1
48	ditto	Shields to Baltic	1	1	1	1	1	1	2	1	4	1	1	9	1
49	ditto	Hull to East Indies	1	1	1	1	1	1	6	1	3	1	2	15	3
50	ditto	Plymouth to Africa	1	1	1	1	1	1	8	1	1	1	2	15	1
51	ditto	Greenock to West Indies	1	1	1	1	1	1	8	1	1	1	2	15	1
52	T. Redway	Greenock to West Indies	1	1	1	1	1	1	3	4	2	1	1	14	1
53	Same owner	Liverpool to East Indies	1	1	1	1	1	1	6	3	1	1	2	14	1
54	ditto	Greenock to Quebec	1	1	1	1	1	1	12	3	2	1	2	22	1

	OWNERS.	Description of Voyage.	1869 Masters.	Mates, incl. Shipmen.	Boatswains.	Quartermasters.	Carpenters.	Sailmakers.	Able Seamen.	Ordinary Seamen.	Apprentices.	Boys.	Other Persons.	Total Crew.	Total Foreigners.
1	W. Williams	Liverpool to Singapore	1	1	1	1	1	1	6	2	1	1	1	12	2
2	W. Judkiff	Liverpool to North America	1	1	1	1	1	1	11	3	1	1	2	17	1
3	T. Stanton	Liverpool to Madras	2	1	1	1	1	1	8	2	1	1	2	16	3
4	W. H. Hawes	Liverpool to Bahia	2	1	1	1	1	1	7	3	1	1	2	16	3
5	Same owner	Liverpool to West Indies	1	1	1	1	1	1	8	3	1	1	2	16	4
6	C. Connell	Glasgow to South America	1	1	1	1	1	1	5	2	1	1	1	14	1
7	Same owner	Liverpool to Quebec	2	1	1	1	1	1	8	4	1	1	2	20	11
8	C. Wright	Liverpool to Quebec	2	1	1	1	2	1	16	4	1	1	2	29	9
9	D. Cock	Sunderland to Point de Galle	1	1	1	1	1	1	7	2	1	1	1	13	1
10	H. Biggs & Co.	Hull to Quebec	2	1	1	1	1	1	9	3	1	1	1	17	1
11	P. Dodds	Newcastle to Mediterranean	1	1	1	1	1	1	4	1	2	1	1	9	1
12	A. Cook	Troon to Quebec	2	1	1	1	1	1	8	5	1	1	2	20	4

TABLE, No. 24.—Comparative Table showing the Constitution of the Crews of certain British Vessels employed

1849.

VESSEL'S NAME.	Official Number.	PORT.	Tons.	OWNERS.	Description of Voyage.	Masters.	Midshipmen	Boatswains.	Quarter-masters.	Carpenters.	Sailmakers.	Able Seamen	Ordinary Seamen.	Apprentices.	Boys.	Other Persons.		
Coronet	23,535	Dublin	851	J. Corson	Dublin to New York	3	–	1	–	1	1	13	–	4	–	2	25	– 1
Wanderer	1,441	- ditto	263	T. Wilson	Dublin to West Indies	2	–	–	–	1	–	5	–	3	–	2	13	2 2
Canton	5,397	Hull	376	D. and — Gibson	Hull to Baltic	2	–	–	–	1	–	7	2	2	–	1	15	2 3
Meteor	5,338	- ditto	399	J. Harrison	Hull to Quebec	2	–	–	–	1	–	7	1	3	–	2	16	– 4
Express	5,540	- ditto	253	W. Priest	London to Baltic	2	–	–	–	–	–	4	–	2	–	1	9	– 3
Marquis of Bute	27,068	Cardiff	502	M. Lisle and Others	Cardiff to Mediterranean	2	–	–	–	1	–	8	1	4	–	1	17	– 6
Sarah	24,523	Cardigan	135	W. Harris	Sligo to Quebec	1	–	–	–	–	–	3	1	2	–	–	7	– 7
Farmer's Lass	11,288	- ditto	144	T. Edwards and Others	Liverpool to Memel	1	–	–	–	–	–	4	–	1	–	–	6	– 8
Cornucopia	26,910	Dartmouth	230	J. Netherton and Others	Plymouth to South America	2	–	–	–	1	–	4	1	2	–	–	10	– 9
Concord	11,588	Goole	270	W. Standering	London to Leghorn	1	–	–	–	1	–	4	–	3	–	1	10	– 10
Thomas	5,431	- ditto	310	- ditto	Hull to Archangel	1	–	–	–	1	–	5	–	2	–	1	10	– 11
Humber	5,468	- ditto	484	W. M. Maude	Hull to North America	2	–	–	–	1	1	8	–	3	–	1	16	– 12
John	33,405	- ditto	250	J. Standering	Hull to Baltic	1	–	–	–	–	–	4	1	2	–	1	9	– 13
Elizabeth	26,645	Bristol	445	M. and — Kington	Bristol to West Indies	2	–	1	–	1	–	11	1	3	–	2	21	– 14
Eliza	7,038	- ditto	291	F. W. Green	Bristol to West Indies	2	–	–	–	1	–	6	–	2	1	2	14	– 15
St. Vincent	3,976	- ditto	492	P. W. S. Miles	Bristol to West Indies	2	–	1	–	1	–	12	–	4	–	2	22	– 16
Minerva	7,772	- ditto	380	M. and — Kington	Bristol to West Indies	2	–	1	–	2	–	10	1	3	1	2	22	– 17
Maria Burriss	2,334	Exeter	212	E. Hawkins	Liverpool to Boston	2	–	–	–	–	–	5	–	2	–	–	9	– 18
Strang	6,393	Bridgwater	418	S. and — Bagshot	Galway to Quebec	2	–	–	–	1	–	6	–	3	–	2	14	
Petrel	5,198	Hartlepool	216	T. Wilkinson	Hartlepool to Archangel	1	–	–	–	1	–	1	–			1	3	
Ann and Sarah	23,913	- ditto	287	W. Lisle	Hartlepool to Egypt	1	–	–	–	1	–	4	–			1	11	
Remembrance	1,044	- ditto	246	W. Watson	Hartlepool to Baltic	2	–	–	–	1	–	1	–			1	3	
Nicaragua	11,644	Gloucester	432	C. March	Gloucester to Quebec	2	–	–	–	1	–	6	2			1	11	
John Pearse	23,550	Fowey	145	J. Pearce	London to Naples	2	–	–	–	–	–	2	1	1		1	7	
Royal Adelaide	32,802	- ditto	408	J. Hicks	Truro to Quebec	2	–	1	–	1	–	6				1	11	
Endeavour	23,537	Hartlepool	226	W. Richardson	Hartlepool to Cronstadt	1	–	–	–	1	–	2						
Cruiser	5,130	- ditto	219	T. Wilkinson	Hartlepool to Windau	1	–	–	–	–	–	2	1					
Eliza Kirkbride	22,478	- ditto	238	W. G. Jackson	Hartlepool to Baltic	1	–	–	–	–	–	4	1					
		TOTAL	30,997		TOTAL	106	8	30	3	80	22	718	7[illegible]	[illegible]	17	1[illegible]	[illegible]	

ABSTRACT of the above, showing Comparison between Crews of the above Vessels for the Years 1849 and 1859.

Number of Men to each 100 Tons, exclusive of Master.

1849.	1859.
4·528	3·628

Capacities: showing Increase and Decrease in each.

Capacity.	1849.	1859.
Mates	106	115
Midshipmen	8	12
Boatswains	30	63
Quartermasters	3	5
Carpenters	80	66
Sailmakers	22	24
Able Seamen	718	622
Ordinary Seamen	73	151
Apprentices	280	107
Boys	17	32
Other Persons	154	142
TOTAL	1,[illegible]	1,[illegible]

Nationality of Foreigners.

Nation.	1849.	1859.	Nation.	1849.	1859.
Russians	[illegible]	5	Belgians	[illegible]	4
Swedes	21	26	French	5	4
Norwegians	5	19	Portuguese	1	3
Danes	1	6	Italians	5	11
Prussians	3	7	Americans	20	12
Germans	14	18	Other Countries	[illegible]	6
Dutch	3	8	TOTAL	78	129

in the Foreign Trade of the United Kingdom, in the Years 1849, 1859, and 1869—*continued*.

1859.																1869.													
OWNERS.	Description of Voyage.	Masters.	Mates.	Midshipmen.	Boatswain.	Quarter-masters.	Carpenters.	Sailmakers.	Able Seamen.	Ordinary Seamen.	Apprentices.	Boys.	Other Persons.	Total Crew.	Total Foreigners.	OWNERS.	Description of Voyage.	Masters.	Mates.	Midshipmen.	Boatswains.	Quarter-masters.	Carpenters.	Sailmakers.	Able Seamen.	Ordinary Seamen.	Apprentices.	Boys.	Other Persons.	Total Crew.	Total Foreigners.
R. Redway - -	London to North America -	1		1		1			16	2			2	23	3															
J. Bradley - -	Dublin to West Indies -	1		1		1			6	3			2	14	1															
W. H. Dilkes -	Hull to North America -	1		1		1			6	1	1		2	13																
Same owner - -	Hull to Mediterranean -	1		1		1			8	1	1		2	15																
ditto - - -	Hull to Mediterranean -	1		1					3	2		1	1	9	2	Same owner - -	Hull to North America -	1		1		1		5	2		1	1	11	2
ditto - - -	Cardiff to North America -	1		1		1			8	2		1	1	15		Watson & Co. - -	Cardiff to Quebec -	1		1		1		10				2	15	1
J. Morecombe and others	Newport to Malta - -	1							2	1	1	1		6																
Same owners - -	Swansea to Black Sea -	1							2	3				6		J. E. Burgess - -	Hull to Mediterranean -	1		1				2	1				1	6	1
ditto - - -	London to Cape of Good Hope	1		1					2	2	1	1	1	9		J. Pepper - -	London to West Indies -	1		1		1		3						6	
ditto - - -	London to Mediterranean -	1		1					4	1	1		1	9	1															
ditto - - -	Hull to Baltic - - -	1		1					4	1	2		1	10	1															
John Wilson - -	Hull to Baltic - - -	1		1		1			7	2			1	13	3	W. Brown, Atkinson & Co.	Hull to Baltic - -	1				1		6				1	11	3
W. Standering - -	Shields to Mediterranean -	1							5		1		1	8																
J. Ford and T. Canning	Bristol to West Indies -	1		1		1	1	6	2	2			2	16		Ford and Canning -	Bristol to Trinidad -	1		1		1		7	2	1		2	15	
Same owner - -	London to East Indies -	2				1		6	1		1	1		12																
ditto - - -	Bristol to West Indies -	2		1		1		11			1	2		18																
G. O. Edwards - -	Bristol to West Indies -	1		1		1		8	2			1		14	3															
P. Tongue - - -	Cardiff to Black Sea -	1		1				3	2		1	1		9																
Same owners - -	London to Honduras -	1		1		1		7	1	1		1		13	4															
G. and M. Wilkinson -	Hartlepool to Baltic -	1						2	2	1		1		7																
Same owner - -	Shields to Baltic - -	1						5	1			1		8	2	W. Todd - - -	Hartlepool to Baltic - -	1						4		3				
ditto - - -	Hartlepool to Baltic -	1						3		3		1		8	1	Same owner - -	Hartlepool to Baltic - -	1						4	1	1				
W. Bird - - -	Cardiff to North America -	1		2		1		8	1			2		15	4	- ditto - - -	Cardiff to Quebec - -	1		1				6	2		1	1	12	1
Same owner - -	London to St. Helena -	1		1				3	1			1		7		R. Scantlebury - -	Newport to Spain - -	1						2	2				5	
W. W. Dingle - -	Fowey to Mediterranean -	1		1		1		7	4		1	1		16		Same owner - -	Padstow to Quebec - -	1		1		1		5	2			1	11	1
Same owner - -	Hartlepool to Cronstadt -	1				1		4	1					7																
G. and M. Wilkinson -	Hartlepool to Baltic -	1						4	2			1		8																
Same owner - -	Hartlepool to Baltic - -	1						4	3					8																
- - - -	- - - - - -	115	12	63	5	66	24	622	151	107	32	142	1,339	129		- - - -	- - - - - -	29	-	15	-	18	5	161	50	9	6	26	319	53

TABLE, No. 25.

Analysis of Crews of Merchant Ships.

Classification of the Crews of Twenty-three Vessels employed in the Years 1849, 1859, 1869.

Year.	No. of Vessels.	Masters.	Mates.	Midshipmen.	Boatswains.	Quartermaster	Carpenters.	Sailmakers.	Able Seamen.	Ordinary Seamen.	Apprentices.	Boys.	Other Persons.	Total Crew.	Total Foreigners.	Total.
1849 - - -	23	48	nil	6	nil	22	7	230	21	81	nil	37	452	21	473
1859 - - -	23	32	nil	18	nil	19	10	102	44	31	3	35	384	41	425
1869 - - -	23	29	nil	15	nil	18	5	161	50	9	6	26	319	53	372

TABLE, No. 26.

Analysis of Crews of Merchant Sailing Ships.

COMPARATIVE TABLE showing the Constitution of the Crews of certain British Vessels (Sailing Vessels)

1860.

Vessel's Name.	Official Number.	Port.	Tons.	Owners.	Description of Voyage.	Masts.	Midshipmen.	Boatswains.	Quartermasters.	Carpenters.	Sailmakers.	Able Seamen.	Ordinary Seamen.
Harkaru	0	London	642	J. H. Allan	London to East Indies	2	–	–	–	1	–	11	–
Cairngorm	443	Glasgow	1,161	Lewis Potter	Glasgow to Melbourne	2	–	1	–	1	1	17	3
Star of the West	15,230	Bristol	406	John How	Swansea to Coquimbo	1	–	1	–	1	–	8	1
Almora	15,356	Liverpool	1,107	John Davies	London to New York	1	–	1	–	1	1	18	5
Kerelaw	15,362	Irvine	319	James Shearer	Glasgow to Africa	1	–	1	–	1	–	6	–
Ellen Stuart	15,370	Liverpool	1,643	Peter Stuart	Liverpool to Calcutta	2	–	1	–	1	1	25	–
Lady Douglas	15,469	Glasgow	564	Robert Henderson	Glasgow to Moulmein	2	–	–	–	1	–	9	–
Maria Needham	21,062	Liverpool	354	William Cliff	Liverpool to West Indies.	1	–	1	–	1	–	12	5
Nora Greame	21,064	ditto	1,001	Edward Bates	Liverpool to Bombay	2	–	1	–	1	1	17	–
West Australia	21,099	Hartlepool	599	David B. Park	London to China	2	–	–	–	1	–	11	2
Belmont	21,101	Plymouth	937	William Clark	Plymouth to Savannah	2	–	1	–	1	1	20	2
Lincolnshire	21,172	London	1,025	Charles Hampden Wigram.	London to Port Phillip	3	8	1	–	1	1	25	2
Moravian	22,526	Aberdeen	967	George Thompson, jun	London to Melbourne	3	–	1	–	1	1	16	3
Delta	24,801	Liverpool	918	S. R. Graves	Bristol to South America	2	–	–	–	1	1	11	6
Blackwall	21,894	London	838	Richard Green	London to Sydney	5	7	1	1	1	1	18	3
Knight Errant	25,074	Liverpool	1,312	George H. Fletcher	London to Calcutta	3	–	–	–	1	1	20	2
Favorite	25,087	Hull	423	William Liversidge	Swansea to Valparaiso	2	–	–	–	1	–	8	3
Empress of India	25,181	Cardiff	766	John Batchelor	London to Bombay	4	–	–	–	1	–	12	2
Albion	32,828	Glasgow	427	James Allen	Glasgow to Montreal	1	–	1	–	1	–	10	3
Princess Royal	32,334	Plymouth	1,107	Thomas Restarick	Plymouth to Quebec	1	–	1	–	1	1	15	6
Agamemnon	32,836	Glasgow	1,047	S. R. Graves	Liverpool to Quebec	2	–	–	–	1	2	16	3
Marchmont	32,839	ditto	1,148	Allan Gilmour	London to Mobile	3	–	1	–	1	1	19	9
Acadia	32,849	Liverpool	754	Robert Wilson	Milford to Quebec	1	–	1	–	1	1	8	8
Jessy	32,879	Limerick	742	Francis Spaight	Limerick to Quebec	2	–	1	–	1	–	14	5
Oriental	32,884	Plymouth	608	J. B. Willcocks	Plymouth to Mobile	2	1	–	–	1	–	10	1
Toronto	32,982	Glasgow	513	James Allan	Glasgow to Singapore	2	–	1	–	1	–	9	4
Liverpool	32,908	London	1,451	George Marshall	London to Calcutta	4	3	1	–	1	1	22	–
Victory	33,002	Liverpool	785	Harper Campbell	Liverpool to Melbourne	2	–	1	–	1	–	12	3
Redan	33,080	Bristol	859	George Kent	London to Sydney	2	–	1	–	1	1	11	3
Clutha	33,088	Glasgow	1,060	Lewis Potter	Glasgow to Melbourne	2	–	–	–	1	1	18	4
Veteran	33,151	Liverpool	1,103	Robert Rankin	Liverpool to Bombay	1	–	1	–	1	1	15	5
Bruce	33,307	Glasgow	1,110	Lewis Potter	Glasgow to Otago	3	–	1	–	1	1	20	5
Resolute	33,322	Aberdeen	1,072	William Rose	London to Callao	2	–	1	–	1	1	14	2
Electric	33,357	Liverpool	1,106	Henry Threlfall Wilson	Liverpool to Aden	2	–	1	–	1	1	17	3
Pride of Canada	33,394	ditto	906	James Baker	Liverpool to Quebec	2	–	1	–	1	1	17	–
		Total	30,745			74	19	3	1	25	22	341	96

Abstract of the Above

Number of Men to each 100 Tons, exclusive of Master.

1860.	1870.
3·0768	2·4478

Capacities: showing Increase and Decrease in each.

Capacity.	1860.	1870.
Mates	74	64
Midshipmen	19	3
Boatswains	25	26
Quartermasters	1	—
Carpenters	35	34
Sailmakers	22	15
Able Seamen	511	412
Ordinary Seamen	96	83
Apprentices	44	31
Boys	23	9
Other Persons	99	78
Total	949	755

TABLE, No. 26.

Analysis of Crews of Merchant Sailing Ships.

Employed in the Foreign Trade of the United Kingdom, in the Years 1860 and 1870.

	1860.						1870.												
	Apprentices.	Boys.	Other Persons.	Total Crew.	Total Foreigners.	Owners.	Description of Voyage.	Mates.	Midshipmen.	Boatswains.	Quarter-masters.	Carpenters.	Sailmakers.	Able Seamen.	Ordinary Seamen.	Apprentices.	Boys.	Other Persons.	Total Crew.	Total Foreigners.
1	3	–	2	19	4	John A. Allan	Hartlepool to West Indies	2	–	–	–	1	–	10	2	4	–	2	21	1
2	–	2	2	29	2	J. & A. Allan	Glasgow to Quebec	2	–	1	–	1	1	19	2	–	–	2	28	3
3	2	–	2	16	–	John How	Swansea to Lota	1	–	1	–	1	–	6	3	–	–	1	13	4
4	–	1	2	30	5	J. W. Michael	Liverpool to River Plate	2	–	–	–	1	–	15	–	5	–	3	26	4
5	2	–	1	12	–	Alexander Reid	Dublin to Archangel	1	–	1	–	–	–	5	1	–	1	1	10	2
6	2	1	2	35	10	Stuart & Douglas	London to Sydney	3	–	1	–	1	–	18	2	1	–	4	30	8
7	2	–	2	16	2	The Albion Shipping Company.	Glasgow to Rangoon	2	–	–	–	1	1	5	2	3	–	2	16	1
8	–	–	2	22	3	W. Cliff	Liverpool to Jamaica	2	–	–	–	1	–	7	2	–	–	1	13	4
9	3	–	2	27	7	Thomas Stenhouse	Liverpool to Bombay	2	–	1	–	1	1	15	2	–	–	2	24	5
10	3	–	2	21	2	John Adamson	London to Adelaide	2	–	–	–	1	1	7	2	–	1	3	17	4
11	–	–	2	29	1	William Clark	Belfast to New Brunswick	2	–	1	–	1	–	13	–	3	–	2	22	2
12	–	3	14	58	2	Money Wigram & Sons.	London to Port Phillip	3	3	1	–	1	1	22	3	–	4	14	52	2
13	2	1	5	33	4	William Henderson	London to Port Phillip	2	–	1	–	1	1	16	1	4	–	3	29	5
14	–	–	2	23	3	Charles Hill	Newcastle to Rio de Janeiro.	1	–	1	–	1	1	9	2	2	–	2	19	4
15	–	4	12	53	3	John Stewart	London to Java	2	–	–	–	1	1	12	1	–	–	2	19	1
16	3	–	2	32	10	George H. Fletcher	London to Calcutta	2	–	1	–	1	1	19	2	–	–	2	28	9
17	1	–	–	15	1	Edward Thorpe	Newport to Singapore	2	–	–	–	1	–	6	1	–	–	1	11	–
18	1	–	2	22	6	W. Nichol	Swansea to Singapore	2	–	–	–	1	–	10	2	3	1	2	21	2
19	–	–	2	18	1	J. & A. Allan	Glasgow to Monte Video	2	–	–	–	1	–	8	4	–	–	2	17	2
20	–	1	2	28	5	John Roche	Liverpool to Quebec	1	–	1	–	1	–	15	3	–	–	2	23	1
21	–	2	2	28	4	S. R. Graves	Liverpool to Rio de Janeiro	1	–	1	–	1	1	11	4	–	–	2	21	4
22	2	2	2	33	10	Allan Gilmour	Liverpool to Savannah	2	–	1	–	1	1	16	3	–	–	3	27	4
23	–	–	1	21	–	Joseph Wilson	Newcastle to Quebec	1	–	1	–	1	–	11	3	1	–	1	19	1
24	–	–	2	25	–	F. Spaight & Sons	Limerick to Quebec	1	–	1	–	1	–	8	5	–	–	1	17	–
25	2	–	3	20	3	Phillip Rawle	Truro to Quebec	1	–	1	–	1	–	7	4	–	–	1	15	–
26	–	1	2	20	–	J. & A. Allan	Liverpool to Matanzas	2	–	1	–	1	–	10	2	–	–	2	18	5
27	3	–	3	38	6	John Hall	Newcastle to Mediterranean.	2	–	1	–	1	–	18	2	–		2	26	11
28	3	–	4	26	3	William S. Lishman	Cardiff to Quebec	2	–	1	–	1	–	7	3	2	–	1	17	–
29	2	–	2	23	2	R. H. Hailstone	London to Quebec	3	–	1	–	1	–	8	3	–	–	2	18	1
30	–	4	2	32	5	William Wright	Newcastle to Port Said	2	–	1	–	1	–	12	3	–	–	2	21	7
31	1	–	2	27	8	Joseph Wilson	Newcastle to Quebec	1	–	1	–	1	–	13	2	–	1	1	20	7
32	–	–	5	36	3	Andrew Nesmith	Glasgow to Quebec	2	–	1	–	1	1	14	4	–	–	2	25	7
33	6	–	3	30	4	William Rose	London to Sydney	2	–	1	–	1	1	14	2	3	–	2	26	1
34	1	–	2	28	6	Michael de Pass	Leith to Quebec	2	–	1	–	1	1	11	6	–	–	1	23	8
35	–	1	2	24	3	Patrick Playfair	Liverpool to Montreal	2	–	1	–	1	1	15	–	–	1	2	23	2
	44	23	99	949	128	–	–	64	3	26	–	34	15	412	83	31	9	78	755	122

Abstract of the Above.

Nationality of Foreigners

Nation.	1860.	1870.	Nation.	1860.	1870.
Norwegians	11	14	Italians	5	4
Swedes	16	28	Greeks	4	1
Danes	10	6	Austrians	4	2
German	23	19	Portuguese	5	1
Dutch	20	16	Americans	11	18
French	5	1	Other Countries	12	11
Spanish	1	1	Total	128	122
Swiss	1	—			

TABLE, No. 27.

Analysis of Crews of Merchant Steam Ships.

COMPARATIVE TABLE showing the Constitution of the Crews of certain British Vessels

1860.

Vessel's Name.	Official Number.	Port.	Tons.	Horse Power.	Owners.	Description of Voyage.	Mates.	Boatswains.	Quarter-masters.	Carpenters.	Able Seamen.	Ordinary Seamen.	Apprentices.	Boys.	
Tiber	1,989	Liverpool	626	136	J. J. Bibby	Liverpool to Mediterranean.	2	1	–	1	9	2	–	–	1
Pera	4,634	London	1,261	450	Peninsular and Oriental Steam Navigation Co.	Southampton to Alexandria.	5	1	4	1	32	10	3	7	2
May Queen	5,151	Hartlepool	418	90	Robinson Watson	Hartlepool to Hamburg	1	–	1	1	6	–	–	1	3
Brenda	8,589	Waterford	601	360	Wm. Malcolmson	London to Mediterranean	2	1	2	1	6	1	–	1	4
Vulture	12,765	London	345	75	Wm. Wagstaff	London to Mediterranean	1	1	–	–	5	–	–	1	5
Gipsey Queen	12,889	Hartlepool	455	100	Ralph Ward Jackson	Hartlepool to Baltic	1	1	1	1	7	–	–	1	6
City of Norwich	18,646	London	471	200	John Hoück	London to Baltic	1	1	–	1	4	–	–	2	7
Albanian	19,715	Liverpool	702	180	J. J. Bibby	Liverpool to Mediterranean.	2	1	–	1	11	1	–	–	8
Cairo	20,451	Liverpool	996	210	J. J. Bibby	Liverpool to Mediterranean.	2	1	–	1	12	3	–	–	9
Agia Sofia	20,460	Liverpool	977	200	G. M. Papayanni	Liverpool to Mediterranean.	4	1	–	1	12	2	–	2	10
Ella Constance	21,173	London	422	80	Edward Corry	London to Baltic	1	1	–	1	6	1	–	–	11
Nova Scotian	21,380	Glasgow	1,488	400	James Allan	Liverpool to Portland	4	1	–	1	27	3	–	–	12
Ceylon	22,173	London	1,374	450	Peninsular and Oriental Steam Navigation Co.	Southampton to Mediterranean.	6	1	4	1	32	10	3	5	13
Gnome	22,516	Leith	354	80	Robert Barclay	Leith to Baltic	2	1	–	1	5	–	–	–	14
Elba	22,574	Newcastle	448	80	R. S. Newall	Liverpool to Mediterranean.	2	1	–	1	18	2	–	–	15
Narwhal	22,686	Dundee	434	65	R. M'Gavin	Dundee to Davis' Straits	1	1	–	2	34	3	–	4	16
Brazilian	25,109	London	1,124	448	C. R. Stock	London to Australia	5	1	4	1	27	5	–	4	17
Ripon	25,125	London	1,308	460	Peninsular and Oriental Steam Navigation Co.	Southampton to Alexandria.	5	1	4	1	21	2	5	2	18
Great Britain	25,967	Liverpool	1,794	500	Liverpool and Australian Navigation Co.	Liverpool to Melbourne	5	1	4	1	41	4	2	2	19
Shannon	27,784	London	2,187	800	Royal Mail Steam Packet Co.	Southampton to West Indies.	5	1	6	1	16	10	–	5	20
Nadiz	27,917	London	602	90	Western Wood	London to Cadiz	3	1	2	1	8	2	–	–	21
Una	27,846	Waterford	1,106	250	William Malcolmson	London to Mediterranean	3	1	1	1	10	1	–	–	22
Venetian	27,936	Liverpool	1,025	225	J. J. Bibby	Liverpool to Mediterranean.	2	1	–	1	16	2	–	–	23
Sicilian	28,178	Liverpool	1,015	257	J. J. Bibby	Liverpool to Mediterranean.	2	1	–	1	16	2	–	–	24
Sein	28,736	London	2,167	800	Royal Mail Steam Packet Co.	Southampton to West Indies.	6	1	5	1	19	10	–	4	25
		Total	23,600	6,979		Total	73	24	38	25	400	76	13	41	

Abstract of the Above.

Number of Men to each 100 Tons, exclusive of Master.

1860.	1870.
6·2118	5·5932

Capacities; showing Increase and Decrease in each.

Capacity.	1860.	1870.
Mates	73	70
Midshipmen	—	—
Boatswains	24	23
Quartermasters	38	27
Carpenters	25	24
Able Seamen	400	315
Ordinary Seamen	76	66
Apprentices	13	6
Boys	41	36
Engineers	86	87
Firemen	350	322
Other persons	340	312
Total	1,466	1,320

TABLE, No. 27.

Analysis of Crews of Merchant Steam Ships.

(Steam Vessels) Employed in the Foreign Trade of the United Kingdom in the Years 1860 and 1870.

	1860.						1870.												
	Engineers.	Firemen.	Other Persons.	Total Crew.	Total Foreigners.	Owners.	Description of Voyage.	Mates.	Boatswains.	Quartermasters.	Carpenters.	Able Seamen.	Ordinary Seamen.	Apprentices.	Boys.	Engineers.	Firemen.	Other Persons.	Total Crew.	Total Foreigners.
1	2	7	2	26	5	J. J. Bibby	Liverpool to Alexandria	3	1	–	1	10	1	–	1	3	6	4	30	4
2	6	24	38	131	–	Peninsular and Oriental Steam Navigation Co.	Southampton to Alexandria.	4	1	3	1	25	2	2	5	6	24	37	110	1
3	2	7	2	21	1	Thomas Hunter Pile	London to Mediterranean	2	1	–	1	4	2	–	–	3	5	3	21	1
4	3	7	5	29	–	Malcolmson Brothers	London to Bordeaux	2	1	–	1	7	1	–	–	2	6	2	22	1
5	2	4	1	15	2	John Viret Gooch	Cardiff to Spain	1	–	–	1	5	–	–	–	2	4	1	14	1
6	2	8	2	24	–	Christopher M. Webster	Hartlepool to Gothenburg	1	1	–	1	6	–	–	–	2	6	1	18	2
7	2	6	2	19	–	George Russell	London to Baltic	1	1	–	1	7	–	–	2	3	8	2	25	–
8	3	8	3	30	–	H. J. and Joseph Atkinson	Liverpool to Baltic	2	1	–	1	8	–	–	–	2	7	2	23	–
9	3	10	3	35	–	J. J. Bibby	Liverpool to Mediterranean.	3	1	–	1	11	–	–	1	3	8	4	32	1
10	3	10	5	40	3	Papayanni Brothers	Liverpool to Mediterranean.	3	1	–	1	14	–	–	–	3	11	5	38	4
11	2	5	2	19	–	J. W. Blakeney	Hull to Baltic	2	1	–	1	4	–	–	–	2	5	1	16	4
12	5	21	29	91	3	J. & A. Allan	Liverpool to Portland	4	1	–	1	26	3	–	–	5	21	25	86	3
13	6	24	40	132	1	Peninsular and Oriental Steam Navigation Co.	Southampton to Alexandria.	4	1	3	1	24	4	3	6	6	24	33	109	1
14	2	6	1	18	–	Donald Currie	Leith to Baltic	2	–	–	–	7	–	–	–	2	6	1	18	3
15	3	6	6	39	3	General Steam Navigation Co.	London to Charente	2	1	–	1	10	1	–	–	2	5	1	23	1
16	2	3	7	57	–	Dundee Whale Fishing Co.	Dundee to Greenland	1	1	–	1	18	8	–	–	2	2	5	38	–
17	4	25	17	93	6	Merchants' Trading Co., Liverpool.	Liverpool to Bombay	4	1	4	1	15	5	–	3	5	20	7	65	2
18	6	21	32	100	–	J. T. Caird and J. Miller	Southampton to Alexandria.	4	1	3	1	20	4	–	4	6	22	39	104	2
19	5	22	46	133	4	Liverpool and Australian Navigation Co.	Liverpool to Melbourne	4	1	4	1	43	10	1	3	5	20	48	140	3
20	6	46	38	134	5	Royal Mail Steam Packet Co.	Southampton to West Indies.	5	1	4	1	19	10	–	4	6	40	37	127	11
21	2	8	5	32	–	John Hall, jun.	London to Mediterranean	3	1	2	1	9	1	–	1	2	8	4	32	1
22	3	6	5	31	1	William Malcolmson	London to Mediterranean	2	1	–	1	11	–	–	1	3	6	6	31	2
23	3	10	4	39	2	J. J. Bibby	Liverpool to Mediterranean.	3	1	–	1	12	2	–	1	3	9	4	36	1
24	3	10	4	39	1	J. J. Bibby	Liverpool to Mediterranean.	3	1	–	1	12	2	–	1	3	9	4	36	1
25	6	46	41	139	6	Royal Mail Steam Packet Co.	Southampton to West Indies.	5	1	4	1	18	10	–	3	6	40	38	126	6
	86	350	340	1,466	43		Total	70	23	27	24	345	66	6	36	87	322	314	1,320	56

Abstract of the Above.

Nationality of Foreigners.

Nation.	1860.	1870.	Nation.	1860.	1870.
Norwegians	4	6	Italians	3	8
Swedes	4	4	Greeks	–	3
Danes	5	4	Austrians	1	2
Germans	5	13	Portuguese	2	1
Dutch	11	6	Americans	–	2
French	4	6	Other Countries	2	—
Spanish	1	—	Total	43	56
Swiss	1	1			

TABLE, No. 28.

Wages and Effects of Deceased Seamen.

RETURN of the Number of Seamen whose Wages and Effects were accounted for during the Twenty-two Years ending 31st December 1873, and of the Amounts Received and Paid by the Board of Trade.

Year.	Number.	Amount Received.	Year.	Number.	Amount Paid.
		£. s. d.			£. s. d.
1852 -	2,386	14,549 – 8	1852 -	1,057	8,852 10 6
1853 -	3,448	20,078 14 5	1853 -	2,002	14,007 4 2
1854 -	2,937	19,892 4 3	1854 -	1,558	14,117 2 6
1855 -	3,617	30,937 8 8	1855 -	1,880	20,722 14 6
1856 -	4,043	33,522 9 7	1856 -	2,168	22,071 5 8
1857 -	3,789	27,171 12 3	1857 -	2,085	18,633 15 –
1858 -	3,796	27,448 16 –	1858 -	2,094	19,981 17 6
1859 -	3,645	29,583 6 10	1859 -	2,144	21,605 12 11
1860 -	3,953	27,889 – 2	1860 -	2,272	20,687 13 2
1861 -	3,774	26,126 2 –	1861 -	2,123	17,437 9 8
1862 -	3,785	24,257 11 1	1862 -	2,194	17,976 14 1
1863 -	3,596	22,925 3 11	1863 -	2,033	16,665 18 9
1864 -	4,283	27,514 15 5	1864 -	2,173	18,285 4 3
1865 -	4,994	34,307 17 10	1865 -	2,466	21,736 2 6
1866 -	5,154	34,798 16 10	1866 -	2,663	23,858 17 2
1867 -	5,547	34,850 8 9	1867 -	2,732	24,327 9 7
1868 -	4,872	27,672 11 9	1868 -	2,685	20,164 10 9
1869 -	4,732	29,037 1 7	1869 -	2,539	19,683 2 5
1870 -	4,459	24,496 16 7	1870 -	2,300	19,682 7 5
1871 -	4,310	22,873 16 9	1871 -	2,296	16,256 13 3
1872 -	4,331	25,837 – 6	1872 -	2,040	16,918 17 10
1873 -	5,297	39,943 11 5	1873 -	2,767	21,726 8 10

The following figures, extracted from the printed Accounts presented to Parliament, show the amounts received on account of "Deceased Men's Wages," and carried to the account of the Merchant Seamen's Fund by the late Merchant Seamen's Fund Corporation, during the Eight Years ending 31st December 1850:

	£. s. d.
1843 - - - - - - - - -	605 13 9
1844 - - - - - - - - -	529 12 1
1845 - - - - - - - - -	332 18 –
1846 - - - - - - - - -	223 13 –
1847 - - - - - - - - -	713 3 –
1848 - - - - - - - - -	618 6 4
1849 - - - - - - - - -	624 – 7
1850 - - - - - - - - -	643 18 11
Total - - -	£. 4,291 5 8

TABLE, No. 29.

Volunteering into the Navy—Compensation.

STATEMENT of the Sums Paid by the Admiralty in each Year from 1854 to 1874, in respect of Seamen volunteering into the Royal Navy, under the Provisions of the 17th & 18th Vict. c. 104, ss. 214 to 220.

DATE.	Number of Cases.	Amounts Awarded.
		£. s. d.
For the Year 1854	nil	nil.
1855	2	74 6 8
„ 1856	74	852 8 8
„ 1857	26	414 17 9
„ 1858	61	825 12 –
„ 1859	52	1,180 12 2
„ 1860	55	718 16 10
„ 1861	62	680 6 2
„ 1862	30	267 17 8
„ 1863	13	223 3 7
„ 1864	10	162 13 –
„ 1865	15	169 17 1
„ 1866	6	50 12 –
„ 1867	4	23 14 6
„ 1868	9	236 10 10
„ 1869	nil	nil.
„ 1870	1	6 3 4
„ 1871	nil	nil.
„ 1872	nil	nil.
„ 1873	nil	nil.
„ 1874	3	19 9 –

TABLE, No. 30.

Lifeboats.

STATEMENT of the Lifeboats subsidised from the Mercantile Marine Fund, and of the Payments in respect thereof, and for Saving Life on the Coasts of the United Kingdom, exclusive of Rocket and Mortar Apparatus, from 1856 to June 1874.

Year.	Number of Lifeboats under Control of National Lifeboat Institution.	Number of Boats under Control of Private Persons and Boatmen.	Total Number of Boats.	Number added Yearly to Boats under National Lifeboat Institution.
1856	40	84	124	—
1857	66	75	141	26
1858	81	68	149	15
1859	92	66	158	11
1860	110	63	173	18
1861	120	59	179	10
1862	124	55	179	4
1863	125	53	178	1
1864	134	52	186	9
1865	150	42	192	16
1866	165	42	207	15
1867	181	41	222	16
1868	188	40	228	7
1869	213	41	254	25
1870	223	33	256	10
1871	230	31	261	7
1872	233	28	261	3
1873	232	31	263	1
1874 (to June)	235	32	267	3

Year.	Sums Granted by Board of Trade in Aid of New Lifeboats.	Payments to Crews of Lifeboats for Exercise, and Coxwains' Salaries.	Payments to Crews of Lifeboats, and Rewards to Fishermen and others, for Services at Wrecks, &c.	Total.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Total in 1855 (March to June)	- -	4 - -	75 4 -	79 4 -
„ 1855–6	961 13 4	27 13 -	209 16 -	1,199 2 4
„ 1856–7	827 15 4	42 5 -	124 5 -	994 5 4
„ 1857–8	634 19 8	35 - -	330 11 7	1,000 11 3
„ 1858–9	200 - -	50 17 -	261 13 6	512 10 6
„ 1859–60	50 - -	107 2 -	637 8 9	794 10 9
„ 1860–1	50 - -	234 13 -	1,240 18 3	1,525 11 3
„ 1861–2	100 - -	135 8 -	383 2 6	618 10 6
„ 1862–3	- -	132 13 -	901 17 9	1,034 10 9
„ 1863–4	- -	122 7 -	703 14 -	826 1 -
„ 1864–5	- -	146 9 -	792 4 7	938 13 7
„ 1865–6	- -	126 1 -	680 11 7	806 12 7
„ 1866–7	- -	118 8 -	420 7 10	538 15 10
„ 1867–8	- -	130 2 -	713 19 4	844 1 4
„ 1868–9	- -	86 11 -	726 14 9	813 5 9
„ 1869–70	- -	90 10 -	1,019 16 6	1,110 6 6
„ 1870–1	- -	50 10 -	436 10 -	487 - -
„ 1871–2	- -	33 18 6	384 10 -	418 8 6
„ 1872–3	- -	83 13 6	524 10 -	608 3 6
„ 1873–4	- -	109 - -	214 10 -	323 10 0

TABLE, No. 31.

Rocket and Mortar Apparatus.

STATEMENT of the Rocket and Mortar Apparatus for Saving Life on the Coasts of the United Kingdom, and of their Expense from 1852 to June 1874.

YEAR.	Number of Rocket and Mortar Stations.	Amount Expended.	YEAR.	Number of Rocket and Mortar Stations.	Amount Expended.
		£. s. d.			£. s. d.
1852 - - -	168	—	1863–4 - - -	239	8,443 17 10
1853 - - -	168	—	1864–5 - - -	243	3,899 17 1
1854 - - -	168	—	1865–6 - - -	249	7,558 18 11
1855 - - -	—	—	1866–7 - - -	265	10,667 1 –
1856–7 - - -	—	801 9 2	1867–8 - - -	274	9,380 7 6
1857–8 - - -	198	3,082 13 7	1868–9 - - -	279	9,501 18 9
1858–9 - - -	216	2,043 19 3	1869–70 - -	282	8,181 6 5
1859–60 - -	216	1,666 7 9	1870–1 - - -	284	8,773 14 9
1860–1 - - -	233	2,816 15 –	1871–2 - - -	281	5,374 13 5
1861–2 - - -	235	2,239 18 4	1872–3 - - -	282	5,984 15 5
1862–3 - - -	238	2,612 7 2	1873–4 - - -	289	8,450 – 8

In 1857 this was transferred to the Board of Trade, and since then the service and apparatus has been entirely remodelled and renewed.

TABLE, No. 32.

Lives Imperilled, Saved, and Lost.

STATEMENT of the Lives Imperilled, Saved, and Lost on the Coasts of the United Kingdom from 1850 to June 1874, so far as the same can be given.

YEAR.	Lives Imperilled.	Lives Saved.	Lives Lost.
1850 - - - -	- -	- -	556
1851 - - - -	- -	- -	289
1852 - - - -	- -	- -	920
1853 - - - -	- -	- -	689
1854 - - - -	- -	- -	1,549
1855 - - - -	- -	1,388	469
1856 - - - -	2,764	2,243	521
1857 - - - -	2,206	1,668	532
1858 - - - -	1,895	1,555	340
1859 - - - -	3,977	2,332	1,645
1860 - - - -	4,234	3,697	537
1861 - - - -	5,508	4,624	884
1862 - - - -	4,729	4,039	690
1863 - - - -	5,716	5,096	620
1864 - - - -	4,135	3,619	516
1865 - - - -	4,860	4,162	698
1866 - - - -	5,832	4,936	896
1867 - - - -	7,178	5,845	1,333
1868 - - - -	5,595	4,771	824
1869 - - - -	6,054	5,121	933
1870 - - - -	5,428	4,654	774
1871 - - - -	4,962	4,336	626
1872 - - - -	5,224	4,634	590
1873 (January to June)* -	2,910	2,301	609
1873–4* - - - -	3,566	3,060	506

* In consequence of an alteration in the date of the publication of the Wreck Register, the figures for the year 1873 are given for the first six months of that year only; the figures for the year 1873–4 are for the 12 months ending the 30th June 1874.

TABLE, No. 33.

Investigations, Inquiries, &c.

Results of Investigations into Wrecks and Misconduct under the Merchant Shipping Act, 1854, in the Year 1874.

Number of Investigations resulting in Cancellation or Suspension of Certificates between 1st January and 31st December 1874.

Charge or Cause of Proceeding.	Local Marine Boards.	Magistrates and Nautical Assessors.	Naval Courts.	Assizes Sessions Magistrates.	All other Courts.*	Total.
Drunkenness - -	15	—	2	—	2	19
Incompetency - -	2	—	—	—	—	2
Misconduct - -	4	—	3	—	—	7
Tyranny - - -	—	—	—	—	—	—
Conviction - -	—	—	—	8	—	8
Loss, Damage, or Abandonment of Ship.	—	72	—	—	35	107
Total - - -	21	72	5	8	37	143

* Such as duly authorised Courts in the British Possessions Abroad.

Number of Investigations not resulting in Cancellation or Suspension of Certificates between 1st January and 31st December 1873.

Charge or Cause of Proceeding.	Local Marine Boards.	Magistrates and Nautical Assessors.	Naval Courts.	Assizes Sessions Magistrates.	All other Courts.*	Total.
Drunkenness - -	3	—	6	—	1	10
Incompetency - -	—	—	—	—	—	—
Misconduct - -	1	—	4	—	—	5
Tyranny, &c. - -	2	—	2	—	1	5
Conviction - - -	—	—	—	6	—	6
Loss, Damage, or Abandonment of Ship.	—	83†	—	—	62	145
Total - - -	6	83	12	6	64	171

* Such as duly authorised Courts in the British Possessions Abroad.
† There were besides eight inquiries in which the accused possessed no certificates.

N.B.—In some of these cases the officers have been reprimanded, fined, &c.

TABLE, No. 34.

Relief of Distressed Seamen.

RETURN of Sums Voted, and of the Expenditure, on account of the Relief of Distressed British Seamen "Abroad" since the Vote has been administered by the Board of Trade from 1855–6 to 1873–4.

YEAR.	Voted.			Expenditure.		
	£.	s.	d.	£.	s.	d.
Net Expenditure for 1855–56 - -	17,000	–	–	8,662	5	1
Ditto - 1856–57 - -	17,000	–	–	16,695	18	9
Ditto - 1857–58 - -	20,000	–	–	21,733	3	2
Ditto - 1858–59 - -	20,000	–	–	17,503	9	8
Ditto - 1859–60 - -	20,000	–	–	21,094	15	1
Ditto - 1860–61 - -	20,000	–	–	20,855	1	5
Ditto - 1861–62 - -	20,400	–	–	22,492	7	1
Ditto - 1862–63 - -	20,400	–	–	25,876	6	4
Ditto - 1863–64 - -	20,400	–	–	19,218	14	2
Ditto - 1864–65 - -	34,400	–	–	35,788	16	8
Ditto - 1865–66 - -	30,400	–	–	28,259	10	5
Ditto - 1866–67 - -	47,342	17	7	*49,162	9	9
Ditto - 1867–68 - -	38,187	5	–	38,187	5	–
Gross Expenditure for 1868–69 - -	45,400	–	–	38,427	7	2
Ditto - 1869–70 - -	45,400	–	–	37,059	1	9
Ditto - 1870–71 - -	36,000	–	–	35,068	12	1
Ditto - 1871–72 - -	35,400	–	–	34,260	8	1
Ditto - 1872–73 - -	36,000	–	–	32,578	4	1
Ditto - 1873–74 - -	33,000	–	–	30,204	12	2

* Includes Five Quarters.

TABLES

SHOWING

THE PROGRESS

OF

BRITISH MERCHANT SHIPPING.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed,*
21 *May* 1875.

[*Price* 6 *d.*]

214.

Under 6 *oz.*

DESERTION (VALPARAISO AND CALLAO).

RETURN to an Order of the Honourable The House of Commons, dated 20 May 1875;—*for*,

COPY "of certain CORRESPONDENCE between the Foreign Office and the Board of Trade upon the subject of DESERTION and CRIMPING at *Valparaiso* and *Callao*, together with the REPORTS of Her Majesty's Consular Officers at those Ports thereupon."

Board of Trade,
20 May 1875.

T. H. FARRER.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed*,
20 *May* 1875.

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COPY of certain CORRESPONDENCE between the Foreign Office and the Board of Trade upon the subject of DESERTION and CRIMPING at *Valparaiso* and *Callao*, together with the REPORTS of Her Majesty's Consular Officers at those Ports thereupon.

— No 1. —

(M. 6847.)

Foreign Office to Board of Trade.

Foreign Office, 3 August 1871.

Sir,

I AM directed by Earl Granville to acknowledge the receipt of your letter of the 28th ultimo, enclosing a copy of an interesting Report by Mr. Monkhouse, on the subject of the crimping system, as carried on at Callao; and I am to request that you will move the Lords of Trade to cause Lord Granville to be informed whether it is wished that any action should be taken in regard to this objectionable practice, by Her Majesty's consular officers in Peru and Chile.

I am, &c.
(signed) *Odo Russell.*

The Secretary to the Board of Trade.

— No. 2. —

(M. 6847.)

Board of Trade to Foreign Office.

Board of Trade, Whitehall,
29 September 1871.

Sir,

WITH reference to your letter of the 3rd ultimo, returning Mr. Monkhouse's Report on crimping and desertion at Callao, with the request that Earl Granville might be informed whether it is the wish of the Board of Trade that any action should be taken in the matter by Her Majesty's Consular Officers in Peru and Chile, I am directed by the Board of Trade to state that it is very desirable that the same preventive measures which were commenced by Mr. Consul Henderson, and alluded to in Mr. Monkhouse's Report, should be continued at Callao by the present Consul, and that both he and Her Majesty's Consul at Valparaiso should take advantage of every opportunity of co-operation with their foreign colleagues and the Peruvian and Chilian authorities to prevent desertion, to protect the wages of seamen, and to facilitate their lawful transfer from ships wishing to discharge to ships willing to engage crews.

The Board of Trade would suggest that (if Earl Granville sees no objection) Her Majesty's Consuls at Callao and Valparaiso should be instructed to furnish, every six months, a report on desertion and crimping at their respective ports.

I have, &c.
(signed) *W. R. Malcolm.*

The Under Secretary of State, Foreign Office.

— No. 3. —

(M.2421.)

Her Majesty's Consul at *Valparaiso* to the Secretary of State for Foreign Affairs.

British Consulate, Valparaiso,
4 December 1871.

My Lord,

I HAVE the honour to acknowledge the receipt of Mr. Hammond's Despatch of the 12th of October last, with reference to crimping and desertion, and instructing me to furnish a Report on this subject every six months.

On my arrival here, in June last, I received constant complaints from the masters of merchant vessels of the desertion of their crews, enticed out of their vessels by crimps who surreptitiously visited the ships.

In consequence of the amount of business which occupied my attention in the consulate, I was unable to take any immediate steps in the matter, and obliged to lay aside the Board of Trade instruction to examine into every case of alleged desertion; I was only able, when desertions were reported, to endorse the statement on the ship's articles.

I became aware that the desertion of seamen, being passed over unnoticed, was constantly increasing, that the subordinate officers of the port tacitly allowed the acts of the crimps to continue, and that the shipping office of the port derived a revenue by furnishing a written and officially stamped discharge, or liberty to re-engage his services, to any seaman, presented by a crimping boarding-house keeper, on the payment of one dollar. These passes or discharges being official documents declaring the bearers, who took fictitious names, to have been discharged from national or other vessels, could not, without positive proof, be gainsayed, and though I made several representations to the port officers on the matter, I met at first with no efficient assistance.

On the night of the 21st August a flagrant case of crimping occurred on board the "Joseph Thomson," of Sunderland, and I at once addressed an official note, a copy of which I herein enclose, to the Intendente, or Governor, on the subject, requesting that a strict inquiry should be made into the matter, and that every measure be taken to put a stop to the illicit acts of the crimps.

Enclosure 1. Consul D. Hay to Intendente, 23 August 1871.

To this letter I would call your Lordship's attention, as especially relating to the proceedings of the crimps, and the profits they derive from their illicit trade.

Before receiving the Intendente's reply, a copy and translation of which I enclose, another and similar case occurred on board the same vessel, the master of which, being about to set sail, engaged two men to replace the deserters, and sent them on board with a crimping runner, who, on reaching the vessel, proceeded to take two others of the crew, with all their effects, out of the vessel.

Enclosure 2. Intendente to Consul, 11 September 1871. Translation. Enclosure 3.

The mate of the vessel, on offering resistance, was menaced with his life, and when he produced a revolver, which he pointed at the crimp, he was immediately overthrown by the two sailors who had been brought on board, and held down on the deck until the crimp and his two prizes got clear of the vessel. The mate was much injured, and as soon as he reported the case to me, I ordered the arrest of the two men, who, being much intoxicated, had remained on board, and then proceeding to the Intendente, verbally demanded immediate assistance in the matter.

The Intendente referred me to the judge of crime, who took the matter up warmly, and succeeded in arresting several parties on whom suspicion fell, as also the man who had taken the sailors out of the vessel, and who was identified by one of the two English sailors who had assisted him by assaulting the mate of the vessel. The crimp was at once treated with great severity, was placed in irons, and all were detained in gaol for many weeks pending further search in the matter, and were only finally released at my request, as the two English sailors who had given their evidence under promise from me of not being punished were, nevertheless, obliged to be detained by Chili law in custody until the matter could be cleared up.

Another case has lately occurred of the same nature, and the judge of crime, who has throughout shown much determination to unravel the whole system of crimping,

crimping, has again imprisoned several suspected parties, and has verbally informed me he purposes treating them with the full rigour of the law.

Already a marked improvement is to be noticed in the reduced number of desertions, and I trust that gradually many of the illicit acts of the crimps may be stopped.

I am, however, of opinion that, iniquitous as the proceedings of the crimps are, some few desertions are attributable to masters of vessels, who at times are inclined to force their men on shore, either to get rid of disagreeable characters, or to derive a profit from their forfeited wages.

I have also striven to check this as much as lies in my power, and on one occasion I was constrained to apply at night to the English senior naval officer in the port to detain a British vessel in order that I might recover the wages, some 25 *l.*, of a man who had been reported to me by the master as a deserter, but who had been illegally and unjustly left by him on shore.

The Chilian Shipping Office continues to grant passes or discharges to such seamen as apply to them, but with less facility than formerly; and since the reception of the Intendente's letter in reply to mine of the 23rd of August, though I have been unable to carry out strictly the measures recommended, or to examine into each case of desertion that is reported to me, I have met with ready assistance and the co-operation of the authorities whenever I have applied to them on the matter.

I have, &c.
(signed) *James de V. Drummond Hay.*

Her Majesty's Secretary of State for
Foreign Affairs.

Enclosure 1, in No. 3.

Sir, British Consulate, Valparaiso, 23 August 1871.

On the night of the 21st instant, at about 9.30 p.m., a boat manned by several men from the shore, went alongside of the British barque "Joseph Thompson," of Sunderland, anchored in this bay, and two of the men boarding the vessel assaulted the mate, John Hunter, and, holding a pistol to his head, threatened to shoot him if he resisted, and deliberately proceeded to take four of the crew with all their effects out of the ship.

Your Excellency will no doubt at once understand that these ruffians are crimps who, keeping boarding houses, earn their living by preying on the foreign sailors who frequent this port.

It is a well known fact that as soon as a British vessel enters this harbour she is visited by the crimps, who allure the sailors to desert, by promises of better ships and increased wages. After a free run on shore, with the attendant debauch, succeeding too well in their object, the deserters are taken by the crimps to a lodging house, the keeper of which obtains a free discharge from the port authorities for the sailor on becoming surety for him, and the payment of 50 cents, or one dollar. This discharge is generally issued to the sailor under a feigned name, and a Chilian vessel is generally mentioned as the sailor's last ship.

The sailor is subsequently brought before me for re-shipment in an English vessel, the crimp receiving from the captain the one month's advance of wages allowed to the sailor, usually about $20, or 4 *l.*, as payment of a swindling account of expenses said to have been incurred on the sailor's behalf. Thus the sailor not only forfeits by desertion the wages from the ship he left, but on re-shipment loses again the to-be-hard-earned advance, it often occurring that ere the man's new ship leaves the port he is again caught by the crimps, and again becomes to them a source of revenue.

The loss in this manner of a vessel's whole crew, on the eve of her departure from this port, is of constant occurrence, the consequent detention of ships for the purpose of obtaining fresh crews causing serious loss.

The facility with which the authorities of this port grant discharges to any sailor has aided these crimps in their illicit operations, and no check being given to their proceedings they have increased in number and audacity, and the circumstance I relate as having occurred on the night of the 21st instant will, without doubt, be repeated unless stringent measures are taken for its prevention.

I now, therefore, request your Excellency, in behalf of the interests of all British shipping, to cause a strict inquiry to be made into the matter, and that every measure may be taken to put a stop to the illicit acts of a set of ruffians who I have reason to believe are not natives of this country, and who yet bring disrepute upon this port by their conduct.

I have, &c.
(signed) *J. de V. Drummond Hay.*

His Excellency Señor Don Francisco Echaurren,
&c. &c. &c.,
Valparaiso.

Enclosure 2, in No. 3.

(Translation.)

Valparaiso, 11 September 1871.

I HAVE the honour to reply to the note you addressed me on the 23rd of August, with reference to the illegal trade which certain individuals carry on with the crews of British vessels, and I have to bring to your notice that, if it is for the moment difficult to completely put a stop to the abuses committed in the boarding-houses for sailors, in consequence of the manner in which they are regulated, I nevertheless believe that measures may be adopted which may lead in a great measure to their avoidance.

One measure, and probably the most efficacious to effect this object, would be that you, as well as the other Consuls, should furnish opportunely to the Maritime Government, as also to the General Shipping Office, a list of all sailors who are properly discharged, as also of those who have been reported as deserted, in order that the Maritime Government may be guided, and regulate its proceedings in the matter.

It would be also advisable that every time occurrences similar to those you refer to take place, that you should place yourself in communication with the Maritime Office, in order that mutual measures be taken to do away with such punishable abuse.

In my opinion, the extinction of the evil which you lament, and the proper regulation of the marine service, depends on your acting in unison with the chief of the maritime and shipping offices.

There is therefore no difficulty in your taking the necessary steps, being assured that you will meet with the decided co-operation of the Maritime Government, who, with the object of putting a stop to the abusive proceedings of the boarding-house keepers, will lend every aid and assistance in pursuing those individuals, as well as the cruising crimps.

I remain, &c.

To Her Britannic Majesty's Consul, Valparaiso.

(signed) *F. Echaurren.*

— No. 4. —

(M. 5769.)

Her Majesty's Consul at *Valparaiso* to the Secretary of State for Foreign Affairs.

My Lord, British Consulate, Valparaiso, 18 March 1872.

WITH reference to Mr. Hammond's Despatch of the 12th October last, and my reply, No. 8, of the 4th of December, on the subject of crimping and desertion at this port, I have the honour to enclose a copy of a letter I addressed on the 13th of February to the captain of the port, or Maritime Governor of Valparaiso, complaining of the still-increasing number of desertions caused by the facility with which the boarding-house keepers and their agents were allowed to visit the vessels in this harbour, and the little or no restriction which was put on seamen and crimps who landed with their effects, and were allowed to pass the Customs and port offices, though their characters were well known. I also addressed the Intendente a note, of which the enclosed is a copy, sending him a copy of my letter to the Maritime Governor, and requesting him to exact the strict fulfilment of any regulations and laws which might be in force against the crimps.

Enclosure 1, Consul Hay to Captain of Port.

Enclosure 2, Consul Hay to Intendente, 13 February 1871.

To these letters I received no written reply, but was verbally informed orders had been issued to the guards at the port to arrest all suspected crimps, and seamen deserting, or encouraging desertion, from vessels in harbour. On the 15th instant a decree, of which I enclose a printed copy and a translation, was published by the Intendente of Valparaiso, instituting a new set of laws and regulations for the effectual control of the crimps, and repression of desertion. The evil practices of the crimps have for so long a time continued unchecked, and the subordinate guards of the port having hitherto, it is to be feared, derived pecuniary profits by connivance, I expect much difficulty will be at first met with in eradicating the nuisance. I believe, however, the chief authorities to be sincere in their wish to put a stop to such abuses, and I therefore have every hope that the laws now laid down may eventually be the means of putting a stop to the illicit acts of the crimps, and thereby to the constant desertions of seamen from merchant vessels in this harbour.

Enclosure 3, Translation of Decree.

Enclosure 4, Memorandum.

I have the honour to enclose herein memorandums of two of the more important

portant cases which have been lately brought to my notice, originating in the audacity with which the crimps of this port have been hitherto allowed to practice their illicit trade. *Enclosure 2, Memorandum.*

I have, &c.
(signed) *James de V. Drummond Hay.*

Her Majesty's Secretary of State
for Foreign Affairs.

Enclosure 1, in No. 4.

Sir, British Consulate, Valparaiso, 13 February 1872.

The continued constant desertions of seamen from British vessels in this harbour oblige me again to call your attention to the impunity with which the crimps or their agents are allowed to row about the harbour in their boats, and to make fast to the bows of vessels at all hours of the day or night, and also to the facility with which the crimps and their victims are allowed to pass with their boxes of effects before the port and custom house guards.

Masters of British merchant vessels have, on more than one occasion, complained that whilst they are prevented by the guard boats from visiting at night a friend on board any other vessel in the harbour, and are ordered back to their ships, they can see the boats plied by the crimps rowing with impunity from ship to ship in their endeavours to entice seamen to desert.

The crimps are aware that a seaman will rarely desert his vessel without he is enabled to carry off his effects, and in this he is naturally encouraged, and assisted by the boarding-house crimps, who also obtain thereby a security for the payment of their very exacting accounts. The sailor thus assisted in taking his effects out of the ship, not unfrequently carries off articles of value which do not belong to him. He is met on the mole by the keeper of the boarding-house, with whom he passes by the guards of the port and custom house as well as in front of the shipping office; no check is put on him, and through the intervention of the same boarding-house crimp he obtains a pass or permit to engage his services from the port shipping office with as great a facility as if he had been properly discharged from his vessel.

Under these circumstances I most earnestly urge, first, that the rules and regulations which forbid any shore boats to pull about the harbour at night may be strictly enforced, and secondly, that all effects belonging to seamen may be stopped by the port or customs guards until a proper request for their release be produced by the seaman from the Consulate representing the nationality of the vessel to which the seaman belongs.

I have, &c.
(signed) *James de V. Drummond Hay,*
Her Britannic Majesty's Consul.

Señor Don P. Lynch,
Captain of the Port, and Gobernador
Maritime, Valparaiso.

Enclosure 2, in No. 4.

Sir, British Consulate, Valparaiso, 13 February 1872.

I have the honour to enclose herein a copy of a letter I have addressed the Maritime Governor, with reference to the continued desertions of seamen at this port, and I earnestly appeal to your Excellency, if my requests are in accordance with the laws of the country, that such restrictions on crimps and deserters as I have asked for may be, by your orders, more punctually carried out. *See ante, Enclosure, No. 1.*

I have, &c.
(signed) *James de V. Drummond Hay,*
Her Britannic Majesty's Consul.

Señor Don Francisco Echaurren,
Intendente,
&c. &c. &c.

Enclosure 3, in No. 4.

TRANSLATION of a DECREE published by the Chief Authority of *Valparaiso*, with reference to CRIMPING and DESERTION at *Valparaiso*.

DESERTERS.

THE Intendencia (Managing Department) has issued the following Decree.

Valparaiso, 13 March 1872.

It being necessary to order certain measures which may tend to repress the desertion of mariners, which is constantly on the increase, causing serious prejudice to the interest of the State, of shipping as well as to commerce in general, and considering:

1. That in many cases such desertions originate and are encouraged by certain individuals who have established thereon a trade or a speculative traffic, and make use of censurable and illegal measures in obtaining their object.

2. That these abuses have been the cause of grave and criminal deeds, and have given rise to serious disturbances in the service and discipline on board of vessels, effecting thereby their prejudicial detention in port.

3. That repeated complaints and representations have been received from public functionaries and from the commercial body urging that a remedy should be applied to abuses and wrongs of this nature.

The Managing Department therefore, in concurrence with the Chief Marine Office, decrees:

Art. 1. Every mariner who obtains his proper discharge, whether he belongs to the Navy or merchant service, must on landing present to the Maritime Governor his discharge, making known to that officer the boarding-house to which he is about to take his effects. If the seaman should afterwards change his lodgings, the owner of the boarding-house which he leaves, as well as that in which he takes his lodgings, must opportunely give notice of the fact to the Maritime Governor (captain of the port).

Art. 2. The Maritime Governor will open a register in which the name, surname, nationality, and other circumstances which constitute a proof and distinct description of the discharged seaman, as also the name and description of the vessel which he leaves and the boarding-house in which he is to lodge.

Art. 3. The seaman who may have been discharged in a proper manner, but who does not possess a certificate to that effect, must be detained at the office of the port, and if on inquiry it should be proved he was a deserter from a Chilian vessel, he is to be placed at once at the disposal of the proper authority, and if from a foreign ship he is to be sent to the consul who represents the flag borne by that vessel.

Art. 4. The commander of the port guard shall detain every individual who brings on shore effects belonging to seamen and will place them at once at the disposal of the Maritime Governor, who will investigate the matter, and will act as ordered in the preceding Article.

Art. 5. Every boat which comes to shore having sailors on board, or which may raise suspicion, shall be taken by the guard, and its crew, being arrested, shall be remitted to the Maritime Office for the purposes decreed in Art. 3.

Art. 6. It is forbidden to owners of boarding-houses, as also to their agents or followers, to visit the vessels in harbour without a written license from the Maritime Governor, who will take the name of the person petitioning for such license, and keep a record of the term of the licence; such persons on returning to shore are to restore to the Maritime Office the license which they had obtained and which must be cancelled.

Art. 7. Disobedience to the laws contained in this decree shall be punished by a fine of from 25 to 50 dollars, and in default imprisonment for a term equal to one day for every dollar of the amount of the fine inflicted. In case of a repetition of disobedience to these laws the offending owner of a boarding-house shall not only suffer the penalty as above decreed but his establishment shall be closed for such time as may be judged by the managing department of Government proper in relation to the consequences brought about by the infraction of the law by such individual. The Maritime Governor, in all cases where such violation of the law is repeated, will be careful to give due information to the Intendencia.

Art. 8. The Maritime Governor and the commander of the guard are encharged respectively to enforce the strict fulfilment of the preceding orders, and will affix in a conspicuous place in their offices a printed copy of the present decree.

Let this be noted, communicated, and published.

(signed) *Echaurren.*

(signed) *R. Domingo*, Secretary.

True translation.

(signed) *James de V. Drummond Hay,*
Her Britannic Majesty's Consul.

Enclosure 4, in No. 4.

MEMORANDUM of Occurrence with reference to what took place on board the British Ship "C. M. Davis," Official Number 46,214, of the Port of Montreal.

AT about 10 p.m. on the night of the 28th December, 1871, a shore boat, with crimps or runners on board, approached the "C. M. Davis," and endeavoured to entice, as they had on former occasions, several of the crew of the vessel to desert. The second mate, John de Winter, and John Thompson, carpenter, threw a heavy lump of coal which went through the bottom of the boat, causing it to fill with water; the boat's crew paddled away in a sinking state, when a shot was fired at them by John de Winter, with a revolver; the bullet struck a boy, who was pulling in the boat, in the belly.

The boat's crew were rescued from sinking by the master of a French vessel, who landed them at the port and placed them in charge of the authorities. John de Winter and John Thompson were immediately arrested by the authorities, the former confessing he had fired, and the latter that he also had a pistol, but had thrown it into the sea when he saw what had been done, though he had not fired off his pistol. By neglect of the police the chief runner escaped, and has not been retaken. The boy has died from the effects of the wound, and the two men, John de Winter and John Thompson, are still detained in gaol, pending a long and procrastinated trial, which I have every reason to hope will now soon be brought to a close, and that the decision of the Chilian Court will at least acquit the carpenter, John Thompson, if not both seamen.

Valparaiso, 18 March 1872. (signed) *James de V. Drummond Hay.*

Enclosure 5, in No. 4.

MEMORANDUM of Desertion of Seamen from the British Ship, "M. C. Nelson," No. 58,983, of *Liverpool*, and "William Dixon," No. 44,719, of *Liverpool*.

ON the 21st February, the masters of the above-named vessels reported several deserters from their vessels, the "William Dixon," stating that six men had left him, taking with them their effects; that amongst the number was the cook of the vessel, who, leaving some of his clothes on board, had returned for them, and having been placed in irons, had confessed that he had returned for his clothes, and had been promised by a crimp that he would be able to re-desert that very night if he would bring with him another of the crew, and that the crimp would call for them in a boat between the hours of 9 and 12.

That all the men were in a boarding house, which he named; that they met every night in a dancing saloon, where women and liquor were provided by the crimps. He further stated that the two apprentices, Walmsley and Roberts, reported as deserters from the "M. C. Nelson," were also to be found amongst the number; I ordered the master of the "William Dixon" to detain the cook in irons on board, and proceeding to the chief of police and judge of crime, obtained two detectives, who were sent on board the "M. C. Nelson," to keep watch during the night, and arrest the crew of the runners' boat, should it return to the "William Dixon" as promised, the two vessels being moored alongside of one another. I farther obtained the assistance of the police, who surrounded at night the boarding-house and dancing saloon in question, with the object of arresting all inside.

The crimps, however, have many abettors in the abuses practised by them, and had evidently obtained information of what was about to take place, for though the police arrested a number of men and women, the deserters in question were not found amongst them, with the exception of the two boy apprentices, Walmsley and Roberts, who were eventually released by me from prison, and sent on board their vessels. Unfortunately also the runners' boat did not come within the reach of the detectives placed by me on board the vessels, for they also appeared to be on the alert, and though a boat was seen to approach the vessel, it made off again without coming alongside.

(signed) *James de V. Drummond Hay.*

Valparaiso, 18 March 1872.

— No. 5. —

(M. 6525.)

Her Majesty's Chargé d'Affaires and Consul General at Lima to the Secretary of State for Foreign Affairs.

My Lord, British Legation, Lima, 11 May 1872.

I HAVE the honour to forward to your Lordship a Despatch from Mr. Consul Hutchinson, containing his first six months' report on Crimping at Callao, which he sent to me for perusal; I trust he will be able to cope with the difficulties of that disgraceful system, symptoms of which from time to time manifest themselves in Callao. *Enclosure, No. 1.*

I think what Mr. Hutchinson says of Mr. Henderson's (former Consul in Callao) proposed plan, that a simple enactment by the Board of Trade prohibiting payment of advances abroad, and rendering masters of ships liable for the whole amount of wages (less actual necessary supplies of clothing, &c.) on the discharge of their crews, worthy of consideration, and which if tried might have the effect in some measure of repressing an evil which seems almost irrepressible in a place where this abominable practice has so long taken root.

Facilities of desertion offer great opportunities for the crimps who are always on the "*qui vive*;" sailors easily get ashore somehow or other, drinks are drugged, and then the men are stowed away until the crimps have occasion to put them on board vessels that want hands.

Unless masters of vessels of all nations agree not to take men they suppose to be obtained in an illicit way, crimping in Callao will never be entirely put down, I apprehend.

Most probably to the fact of several railways being in progress, such as the Oroya and others, not a great way from the coast, where good wages can be obtained, may be attributed an extra temptation for desertion. However, those who may go to the Oroya line, must soon find out that fever and ague are awaiting them, and that they have made a bad exchange for a sea life.

Several Englishmen who have gone up there have taken the fever, and come back to be treated at the Lima hospitals, and more than one or two have died since the beginning of this year.

I have, &c.
(signed) *Wm. Stafford Jerningham.*

The Right Honourable the Earl Granville, K.G.,
&c. &c. &c.

Enclosure 1, in No. 5.

REPORT by Mr. Consul *T. J. Hutchinson* on CRIMPING and DESERTION at *Callao.*

A VERY remarkable peculiarity of the crimping at Callao exists in the fact that the port authorities (by which I mean the staff of the captain of the port and harbour-master) seem unable or incompetent to suppress it.

The shore beach of Callao Bay extends to a length of from three to four miles, and although it is supposed that no boats leave the shore unless from a small mole under the eyes of the captain of the port's watchmen, yet from the stores of the Pacific Steam Ship Company, at the south, to the station of the Oroya Railway at the north, a distance of three miles, the boats of the crimps can get off or on at any time during day or night.

From my inquiries, as well as observations, I have reason to believe that masters of vessels in former times made use of this crimping to get rid of objectionable members of their crews. When vessels came out from England with general cargo or coal, and after discharging here cleared for the Chincha Islands to load guano, it was found by the masters that it would be much cheaper to get rid of their crews during the 90 days that the charter party gave them to load at the islands, native or Chinese labour being much cheaper for loading the ship. Then, returning to Callao to clear out for whatever port they were ordered by their consignees to call at for orders, the masters found the same crimps could procure for them a new crew for the homeward voyage, said crew having been probably taken from some other ship on the accommodating principle. If the experience of 17 years did not teach me the credulity and the gullibility of the English sailor I could scarcely believe what I am assured of as the fact, that these crimps get from the deluded mariner nine-tenths out of his advance for the double favour of getting him a ship homeward bound, and of having a few days of a preliminary spree on shore.

More than one case has been reported to me of a crimp having met a sailor in the streets when the latter was on liberty for recreation, and having treated him to a drink, induced him to go the drinking-house on pretence of meeting some friends. There an anodyne dose was mixed with more drink, and the sailor had been kept for four to five days under its influence, shut up in a room without anyone having access to him till he was liberated on joining a new ship, and then out of the advance of wages he frequently had to pay the whole amount of 90 dollars to the crimp.

Since I came here a case of crimping occurred in two sailors having been taken from a United States ship just as she was about to sail. They were brought to this office next morning to be put on the articles of another vessel, and on Mr. Vice-Consul Wilson asking them from what ship they had come, they acknowledged that they had left the American ship the day before, as she was about to sail. I at once proceeded to the United States Consul

to

to inquire into the fact, and found it was correct. The British ship which they came here to join being badly in want of men I consented to their being enrolled; and, asking the man Brett, who brought them here, for his bill for their one night's stay at his house, he handed in an account of 50 dollars (or over 8 *l.*), which, on my submitting it to the captain of the port as an attempt at swindle, caused Mr. Brett to be sent to prison.

There are seven to eight sailors' boarding-houses at Callao, each of which has its so-called "runners," and each has its boat. These are all crimping-houses, and the boats are kept in order by a general fund.

I believe the exertions of my predecessor, Mr. Henderson, as well as my own, have produced and are producing a good effect in keeping the crimping in check.

On the 9th of January last year, a pair of crimps taking away a German sailor from the North German ship "Edmund Luise" were caught in the act, by the boat that was going its nightly round from the Peruvian "man-of-war" guard ship of the harbour.

These men crimps, as well as deserter, were brought before the Criminal Judge. The trial (done by documentary evidence) was not concluded till 25th July in the same year, when the two crimps were sentenced each to twelve months' imprisonment, and the sailor himself, as their accessory, to six. A similar case is now pursuing before the criminal tribunal, of a sailor named Joseph James, belonging to the English ship "Westphalia" having been taken prisoner by one of the Peruvian war boats, whilst deserting with a crimp in the middle of the day of Good Friday, 30th March last. These men are confined in gaol, and a report of the circumstance is sent to the Board of Trade by the mail which brings this.

Of the difficulties to be met with, and contended against, in the way of crimping, even if unremitting vigilance be kept up, an incident of last month's occurrence may suffice.

The master of the British ship "Monarch" came to this consulate on the 24th of April to tell me that three of his sailors had been decoyed into a crimping house the night before, and had been drugged as well as presented with a large bill in the morning. Till this bill was paid they were refused to be allowed to leave the house. But one of them proposed to the rest, who consented, to come back from the ship that evening with all their clothes, if the crimp let them return, and would send a boat for them at seven o'clock in the same evening. I at once proceeded to the captain of the port, to acquaint him of the appointment. He immediately sent for the crimp in question, who was identified as a man named Murphy, living in what is called Jibboom-street, and who was warned, that if any men deserted from the "Monarch" whilst she was in port, he, Murphy, would be taken up and sent to gaol.

The crimping system in connection with desertion having now become, as it were, an established institution in Callao, I must confess that the only way to do away with it seems to me the plan proposed by Mr. Consul Henderson. That is a simple enactment by the Board of Trade prohibiting the payment of advances abroad, and rendering masters of ships liable for the whole amount of wages (less actual necessary supplies of clothing, &c.) on the discharge of their crews.

It is a monstrous imposition on shipowners to be obliged to pay 30 dollars or 5 *l.* per month for seamen hired at Callao, whilst at the same time, nearly the whole of the three months' advance of 90 dollars (or 15 *l.*) is taken up by the crimp. For I believe on good information that sailors could be easily procured here for the normal wages of 3 *l.* per month if crimping were suppressed. I have further to add that my colleagues do not deem it of any use to work against the system which prevails, as the greater number of them say their opposition for many years has proved of little more effect than the mythological labour of Sysiphus.

I shall not, however, relax in my efforts to curb it, whenever an opportunity offers.

For I lose no occasion of representing to the authorities the serious injury which is done to lawful commerce, as well as to the character of the port by the permission of such an iniquitous system as that of crimping.

(signed) *Thomas J. Hutchinson,*
Her Britannic Majesty's Consul.

10 May 1872.

— No. 6. —

(M. 14,062.)

Her Majesty's Consul at Callao to the Secretary of State for Foreign Affairs.

CRIMPING AT CALLAO.

My Lord, British Consulate, Callao, 10 November 1872.

IN conformity with Mr. Hammond's despatch, Foreign Office, 13th October 1871, and in sequence of my Report of April 26th of this year, on the subject of crimping at Callao, I am glad at having it in my power to state that the exertions used by me are having very considerable influence towards keeping the crimping in check.

At times, however, it breaks out with the vigour of an epidemic ; and we have just recently passed over a paroxysm of this class. The first symptom of it was in the second mate and 16 of the crew of the United States ship, "Harry Moss," deserting in a lot. This was succeeded by 11 men of the British ship, "Senator Webber," and 14 of the crew of the British ship, "Magnificent," refusing to work, and wanting to be discharged. Both of these cases were deemed by me as necessitating a naval court to investigate; for I found that (in these latter mentioned) mutiny was caused, in a great degree, by the influence of crimps. The "runners" (of whom I spoke in my last report) were sent to these, as they are to every ship, in boats, beneath the ship's bows, and passing bottles of whiskey up to the forecastle under cover of the night, tell the credulous sailors that better wages can be had on shore, with spreeing *ad libitum*. Then the crimp (who is a lodging-house keeper, and pays tax for license to keep such a house) gets all he can out of the deluded seaman. And sometimes, within a week, manages to trump up a bill, which the sailor has no alternative of paying but by shipping in a new vessel. The advance note for three months' wages (90 dollars, or about 15 *l.*) generally finds its way, or the greater part of it, to the pocket of the crimp.

Cases occasionally occur, in which one man (say Smith) is brought to a Consulate to sign articles of a ship. He comes from a boarding-house, or crimp-shop, the owner of which has agreed with the ship master to obtain for him so many sailors (as the case may be). But another man, named Brown, who may be in a state of drunkenness or stupor at the time of signing, is sent on board the ship in Smith's place; the crimp pockets the advance of three months' wages, and if Brown's voyage be over months for which Smith has signed, when Brown arrives at the end of his journey, he finds himself not having earned anything, because as Brown he cannot claim, even if it were due, wages coming to Smith. Brown may be a man who has owed something to the crimp; and Smith is one of the crimp's temporary *employés*, who tries on the same dodge at several Consulates in turn.

I am happy in being able to record that I have frustrated some of such cases during the last six months, but have not been able to punish the crimps, owing to the tortuous formality in which are wrapped up the technicalities of the criminal law in this country.

A few weeks ago, a sailor named Thomas Taylor, discharged at this Consulate from the British ship, "St. Peter," went to be boarded at a lodging-house, kept by a notorious crimp named William Childs, a native of the United States. When Taylor was about to join another British ship, the "Nyphon," he came to Mr. Wilson, the Vice-Consul here, at the Consulate for his wages, with which he said he wanted to pay a bill of 69 soles, or above 15 *l.*, charged by Mr. Childs for his maintenance during a fortnight. I at once objected to such an exorbitant bill, knowing how such high charges are swelled by treat to every Tom, Dick, or Harry, who may be on the premises during the stay of the gullible sailor at his lodgings. I at once advised the captain of the port of the circumstance, by taking the bill to him. Thereupon, he directed Childs to give up the clothes of Taylor, which had been detained as a mortgage till the bill was paid, at the same time sending word to Childs that the proper charges in the account would be paid next day.

In company with two policemen of the "Capitania," who brought this message, the bag of clothes was delivered up and brought to the Consulate, where it arrived about 10 minutes after closing time. The police retired, and whilst Taylor was sitting on his bag of clothes outside the Consulate door, waiting to be admitted after knocking, Childs came up with two other men, and striking Taylor, so as to push him off the bag, took away the latter, and returned with it to the crimping-house.

As soon as this came to my knowledge next day, I wrote to the captain of the port, communicating to him my idea of this incident, being a continuation of defiance to his authority as of contempt for my position as a foreign representative. He at once sent Mr. Childs to prison, where he kept him for 48 hours and fined him 5 *l.*, as well as had the bag of clothes sent back to Thomas Taylor.

The present captain of the port (Peruvian lieutenant in the navy, Juan A. Moore) has been only in office since the nomination of Senor Don Manuel Pardo to the Presidency

Presidency in the month of August last, yet he is very energetic in doing all that is in his power to neutralize the evil influences of the crimping system.

Reverting to the case of the deserter, Joseph James, of the British ship, "Westfield" (mis-written "Westphalia"), mentioned in my last report of 26th April 1872, who was imprisoned with a crimp that had been taking him from his ship on Good Friday last, I have to state that this man was imprisoned and kept for trial on the charge of being an accomplice in stealing himself from his vessel.

He was kept in gaol for the same length of time as the crimp whilst the criminal process was being gone through with its tedious formulary of "Escritos" (written depositions). After five months of this he was discharged, as not punishable, for deficiency of evidence. The crimp was discharged at the same time and on the same plea.

No doubt this may be objected to as not consistent with justice; but if I object to or oppose such a routine on the part of the local laws, I should be told at once that the authorities cannot be expected to put down crimping if they are not allowed to do it in their own way.

I have, therefore, again only to express to your Lordships my conviction, fortified by 19 months' experience in Callao, of the only remedy to put down crimping being that proposed by Mr. Henderson, my predecessor, and since then by myself.

I recopy the part of Mr. Henderson's despatch to which I refer, for the purpose of again impressing it on your Lordship :—"I am convinced that (in connection with an invariable observance of the rule laid down by the Board of Trade in its Circular, No. 72, of May 1858, for the security of seamen's balance of wages) a simple enactment prohibiting the payment of advances abroad, and rendering masters of ships liable for the whole amount of wages on the discharge of their crews (less actual necessary supplies of clothing, &c.) would well nigh annihilate crimping, and almost entirely suppress desertion. To suppress the profits would be to strike at the root of the trade, and to abolish the trade would be to remove the principal incentive to desertion, as well as the fruitful source of dissipation and disorderly conduct."

These sentiments have my most perfect concurrence, founded on my observations since I came to Callao.

I have, &c.
(signed) *Thos. J. Hutchinson,*
H. B. M. Consul.

Right Hon. Earl Granville, K.G.,
&c. &c. &c.

— No. 7. —

(M. 14,087.)

Her Majesty's Acting Consul at Callao to the Board of Trade.

British Consulate, Callao,
15 August 1873.

Sir,

I HAVE the honour to enclose a letter, addressed to me by John Cook, carpenter of the barque "Markland," G. W. Stanton, master, O. C. 18,591 ; ship's official number, 64,576. *Enclosure 1.*

When a vessel clears out for sea from Callao, the last thing the master does is to present to this Consulate his licence from the Peruvian authorities to depart, and then a roll of his crew is made out of all on board, and called over one by one, and signed by him, the requisite endorsements are made on the Articles of Agreement, and he then proceeds to the captain of the port, who signs the sailing licence, and retains the roll of the crew, when the ship must at once proceed to sea. If the master does not intend to do so at once, he must not present his papers to the captain of the port, so that the roll containing the names of the crew on board is not given in until the last moment before he sails.

It appears on inquiry that John Cook had a considerable amount of wages due to him, and his tools and effects were of value; and from my past five years' experience in this Consulate, I am thoroughly convinced that not only have

desertions of seamen been encouraged, but that they have been procured, for the gain that has accrued to the master, or ship, from the effects and wages left behind.

The interpretation put upon the 1st clause of the 243rd Section of the Merchant Shipping Act, 1854, by masters of vessels in general, that the wages and effects of a deserter are forfeited to the ship, has been the great cause of desertions being encouraged; and I have, before I came to Callao, heard more than one master of a vessel boast of how much he could make by allowing his men to be taken out of his ship by the runners in Callao. A case in point, which took place in Callao, was that of John Christian, a steward of the British ship "Galloway," official number, 47,569, who was reported by the master, Richard Noall, O. M. 18,992, as a deserter, and it was found out afterwards that the master had assisted him in deserting, and had sent his effects on board of a Peruvian man-of-war (which Christian had joined, asserting he was so wearied by the master's usage), but had not given him any wages. I caused Christian to be produced as evidence against the master before Mr. Consul Hutchinson, and it was made a discharge by mutual consent, by the master paying Christian's balance of wages, 15 *l.* 14 *s.* 3 *d.*

There were no less than 15 desertions from the "Galloway," which vessel, after taking in a cargo and being a month gone from Callao, was put back by alleged compulsion of the crew.

On examining the C. 19*a*, returned from this Consulate to the Registrar General of Seamen, it will be found from the 28th July to the 14th August 1872, No. 943 to No. 955 inclusive, the seamen for the "Galloway" have all had an advance of three months, 13 *l.* 10 *s.*, inserted on the Articles of Agreement; and No. 956, who had been bar keeper to one of the greatest scoundrels of boarding-house keepers in the place, and from whom the agent of the ship procured these men, was let off with only one month's advance. The crew were completed by No. 963 at three months' advance, 13 *l.* 10 *s.* No. 955, John Green, after being on board one or two days, was found to be sick, was forced on shore, and put into the common ward of the hospital by the crimps. Here he was found in an almost dying state after the vessel left, removed into the proper ward for British seamen, and restored to health with some expense to the Board of Trade (34 soles 40 cts.); *see* c. 18, No. 1, Callao Consulate account current with the Board of Trade, quarter ending December 1872.

With regard to the desertions, on the vessel's return to England an indorsement will be found in the official log-book of the "Galloway," which was made after the vessel had been in Callao from the 20th of January to the 4th of April:—

"4th April 1872, 3 h. 30 m. P.M.

"I HEREBY certify that Richard Noall, master of the 'Galloway,' having been "previously in this Consulate to report five desertions, entered in page 13 in this "official log-book, and having stated, the deserters had worked the cargo out "and ballasted the ship in Callao, before deserting, and had also left large "balances of wages behind, and he having been informed that an immediate "search would be made for the said deserters, he went away and returned at the "afore-stated hour, requesting the clearance of the vessel, which was refused on "the grounds that the water police of Callao had reported the afore-mentioned "desertions had been by the connivance of some of the officers of the 'Galloway,' "and that one of the deserters was on board of the 'Huascar,' and until an "inquiry was made, the 'Galloway' could not be cleared out; when the said "master, Richard Noall, made use of this expression: 'it will make me a bad "'man for the future with my crew;' the Vice-Consul replied, 'the Board of "'Trade would look after that;' his (Richard Noall's) reply was, 'The Board of "'Trade they might do as they damned well pleased;' the words were instantly "taken down, and read over to him; his reply was, he 'did not use the word "'damned.'"

This was not the conclusion of the master of the "Galloway" doing wrong.

After the vessel had been a month at sea on her voyage to the Mauritius, she returned to Callao, the master charging the crew with compelling him to put the ship back, under the pretence of unseaworthiness and being too deeply laden; and instantly suspecting a deep design at the bottom of this, viz.: the discharging of the cargo and making an average, if not a condemnation of the vessel, I at once ordered a survey by men who could be depended on, and the vessel was found to be seaworthy and not overladen.

The

The crew were tried by a naval court, sentenced, and imprisoned; and the vessel proceeded on her voyage; afterwards it was ascertained that the idea that the ship was overladen and unseaworthy was originated and instigated by the officers.

The vessels in the guano trade come to Callao, some with cargoes and some in ballast, and generally the time the vessels are in Callao the crews desert. After discharging the cargo outwards, they proceed to the Guano Islands, with seldom more than two-thirds of a crew of natives, who are not seamen; and having to lay three and four months for cargo, and the natives being at a moderate rate of wages, and who only go to the islands and back to Callao, the master finds this does at a much less cost than the original crew, and having the balances of wages and the effects of the deserters, thus make a large profit on desertions in general, as in the case of John Cook, of the "Markland;" and with regard to that, it is my opinion, that no vessel is seaworthy to proceed on such a voyage as from Callao to England without a carpenter.

Another case, the "Albert Gallatin," official number 65,962, Groves, master, O.M. 23,760, arrived in Callao on the 27th December last, and remained in Callao until the 5th day of March, and had 14 desertions, took away nine coasting seamen, that is men who ship only to the Guano Islands and back to Callao; returned on the 4th day of August, and engaged 18 seamen, entered in C. 19 *a*, from No. 1,388 to 1,427 of 1873, and who have, the most of them, signed for three months' advance. This is a most nefarious system with regard to the advances. The seaman does not get an order, signed by the master, on some respectable firm, for payment of the advance, provided he sails in the vessel, but the crimp who collects a crew for a master gives a promissory note; a copy of one I got hold of I now send. Enclosure 2.

William C. Vane is a crimp, and procured the crew for the "Albert Gallatin." The man to whom the note was given, Wm. G. Ward, signed for 13 *l.* 10 *s.* advance, which, at the rate of exchange that ordinary business is done, should have realised 72 soles, instead of which the promissory note is given, not by the master, but by the crimp, and for eight soles, or about 1 *l.* 10 *s.*, short, and the boarding-house master gets the largest share of the remainder, and the poor seaman is swindled out of three months' hard earnings. If it is strictly inquired into at home in the Mercantile Marine Office, where the men are discharged from the "Albert Gallatin," it may probably be found that many of her men engaged in Callao have not received their advances in any other form.

Since Mr. Consul Hutchinson left Callao I have been suffering under inflammation of my right eye and partial blindness, and having to write at nights, from heavy business during the day, this I respectfully solicit as an excuse to be received for any omission of mine in not previously writing.

I am, &c.
(signed) *Bracey R. Wilson*,
Her Britannic Majesty's Acting Consul

The Assistant Secretary,
Marine Department,
Board of Trade.

Enclosure 1, in No. 7.

Honoured Sir, Ship "The Royal Family," 11 August 1873.

I RESPECTFULLY beg to state the circumstances of me being left behind by the barque "Markland," on 5th day of February 1873. A relation of mine came on board, and I asked liberty to go on shore, which was granted by the master of the said vessel; he told me not to be away more than 24 hours. I returned before 20 hours had expired, and found the vessel had sailed. I have received a letter from home stating that the captain is wearing my clothes, and will not give up my tools. The first and second officers and crew can swear that I was not 18 hours out of the ship when she sailed.

I am, &c.
(signed) *John Cook*, Carpenter.

To the British Consul, Callao.

Enclosure 2, in No. 7.

Copy of Crimp's Advance Note to *W. G. Ward.*

J. L. Naters & Co.

Callao, 6 August 1873.

Three days after sailing of the ship "Albert Gallatin," we promise to pay to the order of Wm. G. Ward the sum of 64 soles, providing he goes to sea in the above-named vessel.

(signed) *W. C. Vane.*

— No. 8. —

(M. 6600.)

Her Majesty's Consul at Valparaiso to the Board of Trade.

Sir, British Consulate, Valparaiso, 11 March 1875.

The desertion of seamen from the merchant shipping in Valparaiso harbour, during the last year, has been considerably checked as compared to former years, owing to the assistance I have received from the local authorities in examining into most reported cases of desertion, and inflicting the fines and forfeitures awarded by law, on the crimps and owners of seamen's boarding-houses who have lodged seamen unprovided with a legal discharge. Though the average number of desertions is much reduced, they are yet very frequent.

The principal cause is, without doubt, the higher rate of wages paid for seamen shipping out of this port as compared with the wages for which they are engaged in England.

On some seamen in some vessels in which they are well treated, this allurement appears to have no effect until the man gets a day's liberty on shore, when he is either enticed by the crimps to desert his vessel, or is prevented by foul means from rejoining his vessel.

The rate of wages for seamen at Valparaiso averages from 4 *l.* to 5 *l.* a month, with an advance of one month's pay on shipment, exacted through intervention of the crimp, who alone profits by it, under plea of debt due to him by the seaman, who, as a rule, appears to have so little knowledge of the value of money, that though he may have been allured to desert solely with the prospect of raising his monthly pay from, say 3 *l.* to 4 *l.*, will, after forfeiting by desertion, perhaps some ten or more pounds, willingly and without demur hand over his advance note to the crimp who facilitates his desertion.

For some short time back the Valparaiso crimps have adopted the following method of inducing men to desert: a shore boat will in the night visit stealthily a vessel, and, while the crew are all asleep, the crimp will enter the forecastle and empty the seamen's chests and steal all their clothes. This has occurred to some ten or more vessels since January 1875, and though I obtained promises of more careful watch on the part of the harbour guard, and ordered every master to keep strict watch, and arrest and place in irons any man that came on board his vessel at night, the depredation amongst the shipping by these harbour thieves seemed unaccountably to increase.

On the 5th instant, however, an arrest of some consequence, though attended by the death of two seamen, has been effected on board the barque, "British Crown," official number 65,162, of Plymouth, Mr. Wm. Andrew, master.

The "British Crown" arrived in ballast from Cape Town on the 14th February last. Several members of the crew applied for their discharge from the vessel on grounds too frivolous to receive my sanction. The master cleared his vessel for Peru on the 4th of March, but returned to the Consulate on the 5th, and reported that the crew had positively refused to take the ship to sea. I desired that the three men named, Mark Pollard, Charles Cumming, and William Bishop, who the master declared were leading the crew, to be brought before me, and seeing that they had not even an alleged grievance, but simply refusing to go to sea in the vessel, and moreover declaring their intention to desert, I ordered their discharge from the vessel, and sentenced them to fourteen days' imprisonment as deserters, and to forfeit to the ship any balance of their wages which

which might be due to them after payment of all expenses. Three other men were shipped in their room. On the morning of the 6th the master of the "British Crown" again returned to the Consulate, and reported an attempt of the crimps to steal his whole crew, the death by drowning of two men belonging to the ship, and the arrest of the crimps by him.

It appears that on the 5th instant two of the crew belonging to the "British Crown," named William Wilson and Phillip Richards, deserted the vessel, but did not take their effects; that before daybreak, on the 6th March, Phillip Richards embarked in a shore boat with a crimp named Parsons and three associates, and visiting the British vessel, "Laira," official number 62,152, of Plymouth, caused the desertion of one man from that vessel; they then proceeded to the "British Crown," and took from her a seaman, named William Lamble, as also the effects belonging to the deserters of the previous day; and that although it appears they then left the vessel, the crimp insisted on returning to take another seaman, named William Wickers; the boat was already well loaded with seven men, namely, the crimp, three associates, the man from the "Laira," and two from the "British Crown," besides their effects. It appears that William Wickers, in his haste to leave the vessel, fell on to the gunwale of the boat, and all eight men were thrown into the water; their cries roused the master and his officers, who lowered a boat, but hardly had it touched the water when the crimp, who was swimming, got into it and paddled away into the darkness; assistance was given to the other men in the water, who were picked up, with the exception of William Lamble and William Wickers, who were not again seen; the master of the "British Crown" then hailed a neighbouring ship for assistance, pursued the crimp, whom he fortunately caught sight of boarding a Chilian barque, and, with the assistance of the officers of that vessel, Mr. Wm. Andrew succeeded, after some resistance, in putting the crimp in irons and bringing him on board the "British Crown."

I gave immediate information in writing to the authorities, and pressed a rigorous prosecution of the crimp and all associated with him, who are now undergoing a criminal trial, and will, it is expected, meet with a merited severe sentence, which will, no doubt, be of much service in putting a stop to the audacity of the crimps in this harbour.

I have, &c.
(signed) *J. de V. Drummond Hay.*

The Assistant Secretary,
Marine Department, Board of Trade.

DESERTION (VALPARAISO AND CALLAO).

COPY of certain CORRESPONDENCE between the Foreign Office and the Board of Trade upon the subject of DESERTION and CRIMPING at *Valparaiso* and *Callao*, together with the REPORTS of Her Majesty's Consular Officers at those Ports thereupon.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed,*
20 *May* 1875.

211.

Under 2 oz.

DISTRESSED SEAMEN.

RETURN to an Order of the Honourable The House of Commons, dated 11 March 1875;—*for*,

COPY "of recent CORRESPONDENCE which has passed between certain Shipowners and the Board of Trade relating to the effect, as regards Steam Ships, of the LAW as to the CONVEYANCE HOME of DISTRESSED SEAMEN."

Board of Trade,
19 March 1875.

T. H. FARRER.

(*Sir Charles Adderley.*)

Ordered, by The House of Commons, *to be Printed*,
19 *March* 1875.

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COPY of recent CORRESPONDENCE which has passed between certain Shipowners and the Board of Trade relating to the effect, as regards Steam Ships, of the LAW as to the CONVEYANCE HOME of DISTRESSED SEAMEN.

— No. 1. —

(F. 12,336—74.)

Board of Trade to Mr. *Alfred Holt*.

Board of Trade, Whitehall Gardens,
14 November 1874.

Sir,

WITH reference to your letter respecting the conveyance to the United Kingdom of seamen sent on board your vessels by Her Majesty's officers abroad, I am directed by the Board of Trade to inform you that they have now determined to increase the rate for conveyance of supernumeraries sent home by any steamship as distressed British seamen to three shillings (3*s*.) a day, and thus assimilating the rate to that heretofore allowed for the conveyance of such men by steamships carrying mails under contract with Her Majesty's Government only.

The Board of Trade think you will see that in the interest of shipowners generally no unnecessary expenditure should be incurred in respect of the conveyance home of seamen left abroad, as very often the owners are liable to repay the cost of the conveyance; and they hope that you will be ready to accept payment at the increased rate here mentioned, both for the conveyance of distressed seamen sent on board your vessels at the port at which the men have been left, and at any other port to which they may have been sent for conveyance home.

I have, &c.
(signed) *T. H. Farrer*.

— No. 2. —

(F. 13,825.)

Mr. *Alfred Holt* to the Board of Trade.

Conveyance of Distressed British Subjects.

1, India Buildings, Liverpool,
27 November 1874.

Sir,

YOUR communication dated 14th November was duly received.

I note with a satisfaction in proportion to the increase, that the Board of Trade propose to pay henceforth 3 *s*. per day, instead of 2 *s*. as heretofore, for the conveyance of distressed British seamen by steamer.

Whether the amount be 3 *s*. or 2 *s*. is not a matter of very great moment; what I protest against is the abuse of the law. There was a show of equity in sailing-vessel days for one ship having to bring back the deserters or sick of another, inasmuch as she in her turn might require the same service, but to strain the rules made for such a purpose until they cover the present practice is thorough injustice, a type that is not usual in arrangements subject to English control.

There is a satire in your remark, "The Board of Trade think you will see that in the interest of shipowners generally no unnecessary expenditure should be

incurred in respect of the conveyance home of seamen left abroad, as very often the owners are liable to repay the cost of the conveyance, and they hope that you will be ready to accept payment at the increased rate." If I saw any escape from accepting it, I need hardly say the Board's hope would not be fulfilled.

But for the present the law exists; I must submit; all I can do is to request that—

(1.) The burden be made as light as possible;

(2.) That it be equally divided;

(3.) That the class of ship which produces the distressed British seaman be as much as possible saddled with his conveyance.

(1.) *To make the Burden Light.*—I think instructions should be sent to Her Majesty's officers abroad not to allow any but *bonâ fide* reasons for a seaman's discharge from his ship to be accepted. Instructions to this effect probably exist. They are very insufficiently obeyed.

The money a man receives on his discharge should be equitably proportioned amongst those who maintain him abroad and those who restore him to his native country. At present the sailors' home or lodging-house gets hold of him first, and I fear frequently retains him till his money is spent. If a *pro ratâ* division of his balance were made between them this temptation would be removed. If it be said that Her Majesty's officers abroad have no connection or power over the sailors' homes, I think the assertion would in many instances be capable of disproof.

(2.) *That it be equally Divided.*—I need hardly urge a claim which has justice so clearly on its side, but I am under the impression that it is very far from acknowledged. I carry surgeons in my China steamers, and have large airy deck houses to accommodate naval and military invalids conveyed under contract with Her Majesty's Government; also, the vessels sail at regular intervals, and I am very strongly of opinion that these advantages cause the authorities to impose on me more than my share. More particularly do I ask this treatment in respect of the mail steamers which, opposing me in business and heavily subsidised, are for some reason excused.

(3.) *That the class of ship which produces the distressed British seaman be as much as possible saddled with his conveyance.*

This also hardly needs an argument in its justification. In the China trade these men are mostly left behind by sailing vessels; I urge that those vessels bring them back. To be a deserter, or quarrelsome, or even an invalid, does not set up for a man a claim to the best, quickest, and costliest class conveyance home.

A gross oppression is also practised, and as I believe illegally practised, in the fact that these men are collected from neighbouring ports to one at which a good steamer is going to touch, and then forced on her. Take as an illustration the China trade. I believe the steamers engaged in that trade at present bring home all the distressed British seamen not only from China, but also from the Dutch East Indies, the Philippine Islands, and Japan. Now, as they have no beneficial interest in the trade to those ports, it is not they, but the vessels frequently there, that should bear the burden.

I respectfully urge these considerations; the burden in my particular case is a very heavy one, and much aggravated by the fact that, as far as my recollection goes, I never made a distressed British seaman myself; and I would urge on Her Majesty's Government, if it proposes the introduction of new shipping legislation next Session of Parliament, that the remedy of this grievance be comprehended in their proposal.

Yours, &c.

The Assistant Secretary,
Finance Department, Board of Trade.

(signed) p.p. *Alfred Holt,*
Philip H. Holt.

— No. 3. —

(F. 13,909.)

Mr. *Alfred Holt* to the Board of Trade.

1, India Buildings, Liverpool,
30 November 1874.

Sir,

I BEG respectfully to apply to you for payment of 56 *l.*, being third class passage money of Michael Buckley and Auguste Lungford, sent on board my steamer "Antenor" at Hong Kong on or about the 5th October, and which will arrive in the Victoria Docks, London, about the 1st December.

These men were tendered to me by the authorities to be carried from Hong Kong as distressed seamen, and the reasons for which I make this application are the following: Michael Buckley was discharged sick in Japan from the United States frigate "Lackawana," and was forwarded thence to Hong Kong at the expense of the British nation, and to London at my expense.

Auguste Lungford is a native of Sweden, and not a British subject.

You can inquire into the facts on the arrival of the vessel.

I again protest most emphatically against such injustice and the illegal acts of your servants.

It is not fair to urge that my captain has the power to refuse to receive the men; they are sent alongside by your servants on the day of sailing, when the captain has other business to attend to than to travel miles to consult the consul or shipping master, and it is outrageous to suppose that a large steamer full of cargo and passengers is to be detained for such a purpose.

The value of the coals alone used during the time he is away is more than the passage money of the men.

I conceive it to be the bounden duty of a great public department to—

(1.) Pay me my demand at once, if it is reasonable and I am correct in my facts.

(2.) Point out to me where I am wrong, if your legal advisers consider so,

(3.) Become parties to a friendly action, if your legal advisers are in doubt.

(4.) Send strict instructions out to all consuls and shipping masters by the next mail how such cases are to be dealt with.

(5.) Make known your intentions to shipowners that they may know what they have to perform.

At a time when the energy of the Board of Trade is put forward to crush every delinquent shipowner, it surely must be a becoming thing in that Board to use some exertion to make its own servants perform their duty, and see that no illegal, or doubtful, or unfair pressure is laid on the shoulders of a shipowner who has honestly performed his duty.

It cannot be a worthy part for the Board to seek a position of trying to evade by silence the doubtful acts of its servants. I conceive the Board should show itself worthy of the confidence of shipowners by exerting itself to pay for the illegal, to arrange the doubtful, and support the rightful acts of its servants.

I believe my letters on this subject deserve more than a vague general answer.

When a railway company, or shipowner, or shipmaster, does wrong, your Board finds time and means to punish them quickly enough, and does not keep them four months before setting the law at work. Now do as you would be done by.

It is reported here that your Board contemplate applying to Parliament in the coming Session for further legislation on matters connected with shipping.

If so, it would appear suitable to have all these doubtful points cleared up, and amongst others the question of allowing distressed seamen to retain the power of bringing civil actions against the owners of the vessels carrying them.

Under the law as it now is, owners have to defend, at great expense to themselves, frivolous actions brought by penniless plaintiffs at the instigation of needy attorneys, or pay heavy compensation to avoid litigation.

And this whilst we are forced to carry them for a nominal consideration. My costs for defending *one* such action far exceed the gross amount allowed me by the Board of Trade during the eight years that I have been sailing steamers to China.

(signed) p.p. *Alfred Holt*,
Philip H. Holt.

The Secretary, Marine Department,
Board of Trade.

— No. 4. —

(F. 13,825 & 13,909—74.)

Board of Trade to Mr. *Alfred Holt.*

Board of Trade, Whitehall Gardens,
Sir, 6 March 1875.

I AM directed by the Board of Trade to acknowledge the receipt of your letters of the 27th and 30th November last relating to the effect, as regards your steamships, of the law as to the conveyance home of distressed seamen.

In the former letter you refer to the increase in steamships since the present law was passed, and observe that "there was a show of equity, in sailing-vessel days, for one ship having to bring back the deserters or sick of another, inasmuch as she in her turn might require the same service, but to strain the rules made for such a purpose until they cover the present practice is thorough injustice."

With regard to these remarks, I am to observe that though the employment of steamships has increased very greatly since the law was passed, there were very many steamships in those days, and the law was meant to apply to them as well as to sailing vessels. If, therefore, the law now operates unfairly as between sailing vessels and steamers, it is not because the rules then made have been "strained to cover the present practice." The law and the rules remain the same, and cover the present practice without any straining.

You mention many points in which you think that the present practice needs alteration. These are shortly as follow :—

1. That seamen are discharged by Her Majesty's consuls on insufficient grounds.

2. That their money is often squandered before they are taken in charge by the Consulate.

3. That it is not, as it ought to be, divided proportionately amongst those who maintain them and bring them home.

4. That sailing ships leave behind the far greater proportion of distressed seamen, and that steamships, yours particularly, are compelled to carry home more than their share.

5. That mail steamers opposing you in business and heavily subsidised are for some reason excused.

6. That men are collected from neighbouring ports to one at which a good steamer is going to touch. Sometimes, as in the China trade, from ports to which the steamers in which they are sent home do not trade.

In your letter of the 30th November last, you apply for payment of the ordinary third class fare for the passage home from Hong Kong of two seamen, Michael Buckley and Auguste Lungford, the former because he was discharged from the United States frigate "Lackawana," and the latter because he is not a British subject.

In this letter, three points, in which you think the present practice and law should be altered, are mentioned, which may be added to those already enumerated.

7. That British ships are compelled to bring home, at a compulsory rate, British subjects discharged from foreign vessels, or

8. Foreign subjects discharged from British vessels.

9. That distressed seamen have the power of bringing civil actions against the owners of the vessels conveying them.

Upon

Upon these points I am to make the following observations:—

1. That the instructions to consuls as to the care to be taken that there are sufficient grounds to justify the discharge of a seaman are strict and precise, will be plain to you upon referring to the enclosed copy of them. Those to the officers in the British Possessions Abroad are equally so, and the returns of the expenses of distressed seamen prove that they are seldom or never disobeyed.

2. That this is often the case is too true, but the law gives consuls no power over the wages of seamen discharged abroad unless the cause of such discharge is sickness, amounting to unfitness or inability to proceed to sea, and in the majority of other cases, except shipwreck, viz., those of desertion, there are no wages.

3. At present, what money is paid into the consul's hands is spent in the most economical manner in paying for the seaman's bare necessities of life and for his hospital expenses, and what remains, for his passage home. In some cases there is a balance left after paying the regulated allowance for passage, and this is returned to the seaman. It would be obviously unfair as between one shipowner and another to pay more for the passage when a seaman happens to have more money.

4. The Board of Trade have no doubt that both your line of steamers and many others carry home far more than their proportion of distressed seamen, and that steamers generally carry home many more than they leave behind, and sailing ships many less.

That this is so, is the natural result of the present law and the different employment of the two classes of vessels.

The present law compels masters to take distressed seamen only when bound for a port in the United Kingdom, or in a colony to which the seamen belong

At most large ports steamers are continually touching which are bound to ports in the United Kingdom; sailing vessels comparatively rarely. The movements of steamships are fixed; those of sailing vessels capricious. So that without any unfair selection on the part of consuls or colonial authorities, a larger proportion of distressed seamen must be sent home by steam ships, or kept on hand at enormous expense, and often with injury to health.

It is proposed to alter the law as far as possible to meet the evil, *i.e.*, by making it compulsory on ships to take distressed seamen even when not bound to the United Kingdom, but this will not prevent the steam ship from being often the only available way of bringing home the men that are left behind by sailing ships.

It is obvious in the first place that it is only vessels which will certainly be bound for the United Kingdom within a reasonable time, that could be used for the purpose of taking the men home, and this can seldom be ascertained in the case of sailing vessels which have not completed their outward voyage, or are going to seek for cargo at ports on the way home. In the second place, and these cases are perhaps the most frequent, the health of the seamen requires medical care, or attention, or food, which cannot be obtained on board sailing ships, and often a quick passage to a healthy climate is not only very desirable, but the only chance of recovery.

These, together with economical considerations to which I shall allude hereafter, point to the inevitable conclusion that steam ships must be and should be employed in conveying home a number of distressed seamen, in excess of the number they leave behind, and that in order to adjust the burden equally between sailing ship and steamer, some other way must be devised than that which seems most simple and just, viz., that each class shall carry home a number equal to those it leaves behind.

The only way of doing this in the power of the Board of Trade is to raise the rate paid for passages of distressed seamen in steam ships, and they have raised it to double the rate paid to sailing ships, and they do not, as at present advised, think that they can pay more, in justice to the public whose vote they administer.

5. This special complaint has already been made the subject of careful inquiry, and it has been found that no mail steamers are excused, and that no partiality is shown to one ship, or one line of ships.

6. This is (especially in the China trade) the only way in which the numerous sick and superfluous seamen which throng the less frequented ports can be disposed of. For seamen left in the distant ports of Java and Japan, and the less frequented ports of China, there is very seldom an opportunity of sending them home straight, as vessels rarely clear from these ports bound to the United Kingdom, and they are therefore necessarily sent to Singapore, Hong Kong, or some other port where such opportunities are more frequently afforded.

That ships employed in one trade should have to take home the distressed seamen who have been engaged in another without any reciprocal advantage, is, no doubt, an injustice, and there seems to be no way of meeting it but one, viz., to make the owner of the ship leaving the man behind liable to pay the owner of the ship conveying the man home a fair compensation for the expense and inconvenience. Such a compensation cannot properly be paid by the public.

7. This seems, also, a real grievance, for the British shipowner does not gain any reciprocal advantage, as foreign ships do not convey home foreigners who serve on British ships, and it is, perhaps, especially hard in the case of men employed on board foreign ships of war. But the present law makes it distinctly compulsory on British shipmasters to convey seamen left behind by foreign ships of war, and the Board of Trade cannot relieve any shipowner of his legal burdens at the expense of the general public.

8. In this case there is no such hardship in principle, which does not equally apply to a British seaman on board a British ship, the accident of his nationality does not affect the case. The employment of foreign seamen in the place of British does not increase the total number of seamen; and if it did, there would be no special hardship, as all ships employ foreign seamen.

In both these cases there is no doubt that the master of your steamer "Antenor" was legally bound to convey the man home. *See* Merchant Shipping Act, 1854, sect. 211, and Merchant Shipping Act, 1855, sect. 16. And the Board of Trade cannot, either in justice to other shipowners, who are paid at the same rate for similar passages, or to the public whose money they administer, consent to pay you more than the amount allowed by the regulations for other distressed seamen.

9. There may be legal difficulties in the way of carrying into effect this suggestion, but the Board of Trade agree with you in thinking that shipowners who are compelled by law to give passages at a compulsory rate to distressed seamen, and are bound under severe penalties to give them proper accommodation, should not be subject in addition to a civil action from the men themselves.

In conclusion, I am to observe that the whole question appears to you primarily as one of ill-adjusted balance between the owners of one class of ships and the owners of another class.

It appears, however, to the Board of Trade, as the administrators of the Vote for the Relief of Distressed British Seamen, as one of ill-adjusted balance primarily between shipowners and the public, and secondarily only between one class of shipowners and another.

The British public pay at the rate of about 30,000 *l.* a year for the relief of the disabled servants of shipowners, and they are not aware that it has ever been thought the duty of the public to bear such a burden for any other class; nor do they see any reason why, either equitably or theoretically, this distinction should be made in favour of any one section of the community. They have, therefore, when brought face to face with some comparative hardship as between one shipowner and another, this problem to consider, whether to right this wrong they will not still further be obliged to wrong the public, whose trustees they are.

It is, however, very desirable that no injustice should be done to any party, and that in this question of the conveyance home of distressed seamen, each class of shipowners should have his fair burden; but the Board of Trade do not see how it is possible to do this by a different administration of the Vote for the Relief of Distressed British Seamen, without imposing an undue burden upon the public.

When the present law was passed, although steamships were numerous, their traffic was not so developed as to make the operation of the law sensibly less just than its principle, viz., that all ships should be compelled to carry home distressed seamen,

seamen, because they all left them behind; but now there appears to be no doubt that steamships bear more than their fair share of the burden.

As long as all ships were paid alike at a minimum rate, and bore burdens alike, there was no difficulty in making regulations to which no exception could be taken on the score of justice to the shipowner, or expense to the public, who willed to be taxed to a certain extent for the benefit of a certain class. But now that altered circumstances have made one class of shipowners discontented with the arrangement, and to satisfy their demands requires an expenditure which the Board of Trade have no right to think that the public would be willing to defray, the position has become seriously complicated.

It is plain to them that the Vote for the Relief of Distressed British Seamen demands a more economical administration than is consistent with paying such a rate for the conveyance home of seamen as would satisfy steam shipowners who look at the question from your point of view; viz., as one of dividing a burden equally between the two classes of shipowners.

This to them is, as has been before observed, the secondary question, and they think that its solution of right belongs to those to whom it is of primary importance, viz., shipowners generally.

They would, therefore, be glad if you, who are so much interested in the question, and to whom the position and views of the Board of Trade in the matter have now been fully and frankly stated, would favour them with your opinion as to whether some comprehensive agreement might not be come to between shipowners generally by which the payment for passages home of distressed seamen should be made by the owner in whose service a man becomes distressed to the owner of the ship which conveys him home, without the interference of the Government.

Should such an agreement be come to, the Board of Trade would be glad to assist in such legislation as may be necessary to give it effect.

I am, &c.

Alfred Holt, Esq., (signed) *R. G. C. Hamilton.*
1, India Buildings, Liverpool.

— No. 5. —

(F. 9340.)

Messrs. *Lamport and Holt* to Board of Trade.

Sir, Liverpool, 12 August 1874.

On the 1st ultimo, our steamer "Cervantes" being at Rio Grande do Sul, bound to Rio de Janeiro, the master was required by Her Majesty's consul to receive on board and convey to Rio de Janeiro seven distressed British seamen, pursuant to the order enclosed herein. These seamen were conveyed to and landed at Rio de Janeiro accordingly.

The usual passage money amounts to 280 milreis, the equivalent in sterling money at the current exchange of 25⅜ *d.* per milrei, being twenty-nine pounds twelve shillings and one penny (29 *l.* 12 *s.* 1 *d.*); which sum we beg the favour of your ordering to be paid to us.

We are, &c.

The Assistant Secretary, (signed) *Lamport and Holt.*
Board of Trade, London, S.W.

— No. 6. —

(F. 9340.)

Board of Trade to Messrs *Lamport and Holt.*

Board of Trade, Whitehall Gardens,

Gentlemen, 21 November 1874.

With reference to your letter of the 12th of August last respecting the conveyance of seven distressed British seamen on board your steamer "Cervantes"

from Rio Grande do Sul to Rio de Janeiro, I am directed by the Board of Trade to inform you that they have now determined to increase the rate of the conveyance of supernumeraries sent home by any steam ship as distressed British seamen to three shillings (3*s.*) a day, thus assimilating the rate to that heretofore allowed for the conveyance of such men by steam ships carrying mails under contract with Her Majesty's Government only.

The Board of Trade think you will see that in the interest of shipowners generally no unnecessary expenditure should be incurred in respect of the conveyance home of seamen left abroad, as very often the owners are liable to repay the cost of the conveyance; and they hope that you will be ready to accept payment at the increased rate here mentioned, both for the conveyance of distressed seamen sent on board your vessels at the port at which the men have been left, and at any other port to which they may have been sent for conveyance home, as well as for the conveyance of seamen to an intermediate port for final conveyance home.

I am, &c.
(signed) *R. G. C. Hamilton.*

To Messrs. Lamport and Holt,
Shipowners, Liverpool.

— No. 7. —

(F. 13,660.)

Messrs. *Lamport and Holt* to Board of Trade.

Sir, Liverpool, 24 November 1874.

We beg to acknowledge the receipt of your letter of 21st instant (registered number, F. 9340), relating to the conveyance of seven passengers by our steamer "Cervantes," from Rio Grande do Sul to Rio de Janeiro. We do not understand from it whether you decline to pay us the twenty-nine pounds twelve shillings and one penny (29*l.* 12*s.* 1*d.*) which we claim, the regular third-class passage money for them, or whether you invite our opinion as to the fairness or otherwise of the Board of Trade allowing in all future instances a payment of three shillings (3*s.*) per man per day for the conveyance of distressed British seamen by British steam vessels.

We are, &c.
(signed) *Lamport and Holt.*

The Assistant Secretary,
Finance Department, Board of Trade.

— No. 8. —

(F. 13,660—74.)

Board of Trade to Messrs. *Lamport and Holt.*

Board of Trade, Whitehall Gardens,
1 December 1874.

Gentlemen,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 24th ultimo, respecting the conveyance of distressed British seamen from Rio Grande do Sul to Rio de Janeiro by your steamer "Cervantes."

In reply, I am to inform you that for the reasons stated in their letter of the 21st ultimo, and bearing in mind the fact that the master of the "Cervantes" accepted the consul's order for the conveyance of the men to Rio de Janeiro as distressed seamen, they are not prepared to pay for the conveyance of these men at the ordinary passenger rates.

I am, &c.
(signed) *R. G. C. Hamilton.*

To Messrs. Lamport and Holt,
Liverpool.

— No. 9. —

(F. 14,042.)

Messrs. *Lamport and Holt* to Board of Trade.

Sir, Liverpool, 4 December 1874.

We duly received your letter of the 1st inst. (F. 13,660—74), respecting the seamen carried by the "Cervantes."

We were not aware that the master of the "Cervantes" accepted these men from the consul as distressed seamen, and therefore before we can fully reply to your letter we have thought it well to write out to him to ascertain exactly the circumstances under which they were received on board his ship. We will let you know his reply, and then leave the matter in your hands.

We are, &c.
(signed) *Lamport and Holt*,
per *C. H. Cook.*

The Assistant Secretary
Finance Department, Board of Trade.

— No. 10. —

(F. 1359—1875.)

Messrs. *Lamport and Holt* to Board of Trade.

Sir, Liverpool, 1 February 1875.

Referring to our letter of the 4th December, we have now received the following reply from the master of the "Cervantes," respecting the circumstances under which the seven men were put on board his steamer at Rio Grande for conveyance to Rio de Janeiro:—

> "I received the seamen on board as distressed British subjects, but in ignorance of the law, and presuming that the consul would not send them on board without having authority to do so. On reading the Act of Parliament relating to distressed seamen after leaving the port of Rio Grande, I found that consuls had power to send distressed British seamen on board British ships bound for British ports only; and as the consul at Rio Grande was aware that the 'Cervantes' was not bound for a British port, I considered he had exceeded his power, and I reported the matter to our agents at Rio."

The master of the 'Cervantes" thus appears to have received the men on board, relying on the good faith of the consul not to order their conveyance unless the law gave him power to do so; and as the action of the consul was so clearly illegal, we trust that you will have the fairness to have the passage money for which we are asking transmitted to us.

We are, &c,
(signed) *Lamport and Holt.*

The Assistant Secretary,
Finance Department, Board of Trade.

— No. 11. —

(F. 1359.)

Board of Trade to Messrs. *Lamport and Holt.*

Board of Trade, Whitehall Gardens,
9 February 1875.

Gentlemen,

With reference to your letter of the 1st instant, on the subject of the conveyance of distressed seamen on board your ship "Cervantes," I am directed by the Board of Trade to point out to you that the Royal Mail and other lines of

steamers do not raise any difficulty of this sort, and to request that you will have the goodness to inform them whether you refuse to accept payment at the increased rate of three shillings (3 *s.*) a day for each man conveyed.

I am, &c.
(signed) *R. G. C. Hamilton.*

Messrs. Lamport and Holt, Shipowners,
Liverpool.

— No. 12. —

(F. 1736.)

Messrs. *Lamport and Holt* to Board of Trade.

Sir, Liverpool, 10 February 1875.

We are favoured with your letter of yesterday on the subject of the conveyance of distressed seamen on board our steamer "Cervantes," between Rio Grande do Sul and Rio de Janeiro.

We will refrain from expressing any opinion about the matter; and as the Board of Trade are acquainted with the whole circumstances, we shall be quite content to abide by their interpretation of the law, and to receive the amount of passage money which they determine upon as due to us.

We are, &c.
(signed) *Lamport and Holt.*

The Assistant Secretary,
Finance Department, Board of Trade.

DISTRESSED SEAMEN.

COPY of recent Correspondence which has passed between certain Shipowners and the Board of Trade relating to the effect, as regards Steam Ships, of the Law as to the Conveyance Home of Distressed Seamen.

(*Sir Charles Adderley.*)

Ordered, by The House of Commons, *to be Printed,*
19 *March* 1875.

108.

Under 2 oz.

FOG SIGNALS.

RETURN to an Order of the Honourable The House of Commons, dated 27 May 1875;—*for*,

COPY "of CORRESPONDENCE with the Board of Trade respecting any FOG SIGNALS authorised by the three General Lighthouse Authorities, or sanctioned by the Board of Trade, since the 18th day of February 1873 (in continuation of Parliamentary Papers, No. 119, of Session 1873, and No. 188, of Session 1874)."

Board of Trade, 27 May 1875.

T. H. FARRER.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed*, 27 *May* 1875.

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COPY of CORRESPONDENCE with the Board of Trade respecting any FOG SIGNALS authorised by the three General Lighthouse Authorities, or sanctioned by the Board of Trade, since the 18th day of February 1873 (in continuation of Parliamentary Papers, No. 119, of Session 1873, and No. 188, of Session 1874).

– I. –

FOG SIGNALS UNDER THE JURISDICTION OF THE CORPORATION OF TRINITY HOUSE.

— No. 1. —

Trinity House to Board of Trade.

(H. 1800.)

Trinity House, London, E. C.,
14 March 1874.

Sir,

I AM directed by the Board to transmit to you, for the consideration of the Board of Trade, the annual estimates for expenditure for lighthouses, &c. within the jurisdiction of this Corporation for the year ending 31st March 1875, showing a total of 284,292 *l.* 11 *s.* for all services, and to which I am to request their Lordships' statutory sanction.

The gross total, as above given, shows an increase over the corresponding Estimates of last year of 20,600 *l.* 0 *s.* 11 *d.*, which is mainly attributable to the proposed adoption of a general chain of fog signals round the coast, and the introduction of important improvements in the character of such signals, to which special reference will be made hereunder, with other matters connected with Abstract L. and New Works.

The items of proposed expenditure which appear to call for comment are as follows:

* * * * * * *

Abstract L.—New Works.

* * * * * * *

The amounts inserted for fog signals included in this Abstract are particularised in a separate statement, showing the positions in which the signals are proposed to be placed, and the probable cost of the instruments to be used, though the particular instrument in each case is not yet determined upon. This subject is still under consideration, and will not be finally resolved upon until the completion of Dr. Tyndall's Report upon the experiments at South Foreland. The Elder Brethren have, however, thought it better to lay before the Board of Trade a comprehensive plan, with the cost of establishing the whole scheme, although extending beyond the current year's estimate for stations expected to be established during that period, especially as in detail it may be found that the nature of the instrument ultimately selected for each station respectively, and, possibly, delay and difficulty in procuring it, may alter the sequence of its application.

Enclosure.

* * * * * * *

I am, &c.
(signed) *Robin Allen.*

Enclosure in No. 1.

STATEMENT of Sums required for Completing, with those already established, a Cordon of Fog Signal round the English Coast, showing the Amount required for 1874-5, and the Amounts remaining to b Expended in subsequent Years.

STATION.		Engineer's Estimate.	Amount already Expended.	Amount required for present Year, 1874–75.	Amount required in addition to Complete.	When expected to be Finished.	Amount sanctioned i last Year's Estimates.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.		
Fern (Outer)	Lighthouse	2,500 – –	– –	2,500 – –	– –	1874	—
Souter Point	ditto	– –	– –	– –	– –	Already established.	
Flamborough	ditto	– –	– –	– –	– –	– – – ditto.	
Spurn	Light vessel	1,200 – –	– –	1,200 – –	– –	1875	—
Outer Dowsing	ditto	1,200 – –	– –	– –	1,200 – –	—	—
Newarp	ditto	– –	– –	– –	– –	Already established.	
Shipwash	ditto	1,200 – –	– –	1,200 – –	– –	1874	—
Kentish Knock	ditto	1,200 – –	– –	– –	1,200 – –	—	—
South Sand Head	ditto	1,200 – –	– –	1,200 – –	– –	1874	—
Dungeness	Lighthouse	– –	– –	– –	– –	Already established.	
Owers	Light vessel	– –	– –	– –	– –	– – – ditto.	
St. Katherine's	Lighthouse	– –	– –	– –	– –	– – – ditto.	
Shambles	Light vessel	1,200 – –	– –	– –	1,200 – –	—	—
Start	Lighthouse	2,500 – –	– –	2,500 – –	– –	1874	—
Lizard	ditto	2,500 – –	– –	2,500 – –	– –	1875	—
Seven Stones	Light vessel	– –	– –	– –	– –	Already established.	
Longships	Lighthouse	2,500 – –	– –	2,500 – –	– –	1875	—
Hartland Point	ditto	– –	– –	– –	– –	Already established.	
Lundy	ditto	– –	– –	– –	– –	– – – ditto.	
Helwicks	Light vessel	1,200 – –	– –	– –	1,200 – –	—	—
Scarweather	ditto	1,200 – –	– –	1,200 – –	– –	1874	—
Milford	Lighthouse	2,500 – –	– –	– –	2,500 – –	—	—
South Bishop, or Smalls	ditto	2,500 – –	– –	– –	2,500 – –	—	—
Cardigan Bay	Light vessel	1,200 – –	– –	– –	1,200 – –	—	—
Bardsey	Lighthouse	2,500 – –	– –	2,500 – –	– –	1874	—
Carnarvon Bay	Light vessel	1,200 – –	– –	– –	1,200 – –	—	—
North Stack	Fog gun	– –	– –	– –	– –	Already established.	
Skerries	Lighthouse	2,500 – –	– –	2,500 – –	– –	1875	—
Morecambe Bay	Light vessel	1,200 – –	– –	1,200 – –	– –	1874	—
Bahama Bank	ditto	1,200 – –	– –	– –	1,200 – –	—	—
Spare	ditto	1,200 – –	– –	1,200 – –	– –	1874	—
	£.	35,600 – –	– –	22,200 – –	13,400 – –		

N.B.—These Estimates were sanctioned by the Board of Trade on the 4th May 1874.

— No. 2. —

Trinity House to Board of Trade,

(H. 3484.)

Sir, Trinity House, London, E.C., 23 May 1874.

I AM directed to acquaint you that during recent experiments on fog signals, conducted at South Foreland by a committee of this Board, acting in concert with Dr. Tyndall, their scientific adviser, attention was given to the possible improvement of the gun signals now in use as at Flamborough, North Stack, &c., and of those which may hereafter be introduced.

The gun hitherto applied to this service has been the ordinary 18-pounder muzzle-loading cannon, fired with a charge of 3 lbs. of powder, and as there are only two gunners employed at a station, one on duty and one at rest, it is necessary that 15 minutes' interval at least should be allowed between the reports, in order to give time for reloading under the present system. This condition detracts very much from the usefulness of the signal given; five minutes is the greatest interval of silence in all other sound signals in use.

Besides the need for increased facility of working, the form and material of the gun, as conducing to the production of a loud report and vivid flash, were also considered.

The Board thereupon determined to apply to the authorities of the War Department for a design for a gun which, in the opinion of the professional officers at Woolwich, would best answer the conditions required. By permission of the Right Honourable the Secretary of State for War, the department most courteously undertook the task, and a design, specification, and estimate for a bronze gun firing charges of 3 lbs. of powder, and capable of being discharged by one man at intervals of five minutes or less has been furnished, the cost of the gun being estimated at 250 *l.*

The Elder Brethren, considering that this will be a very important improvement upon the gun now in use, direct me to request their Lordships' statutory sanction to the expenditure of 250 *l.* for the manufacture of a specimen gun by the War Department.

Enclosed herewith are the letter, specification, and design received from the War Office, together with the reports of Professor Tyndall and Mr. Douglass thereon, which it is requested may be returned after perusal by their Lordships.

I am, &c.
(signed) *J. Inglis.*

The Assistant Secretary,
Harbour Department, Board of Trade.

Enclosure 1, in No. 2.

Surveyor General's Department, War Office,
10 April 1874.

Sir,

REFERRING to your letters of the 28th February and 11th March last, on the subject of the construction of a gun for fog-signal purposes, I am directed by the Secretary of State for War to forward, for the consideration of the Elder Brethren of the Trinity House, a drawing and accompanying description of a gun designed in the royal gun factories to meet the object in view, and I am to request that you will move the Board to cause the remarks thereupon of their scientific advisers to be communicated for Mr. Hardy's information.

I am to add that a gun according to the enclosed design, with a suitable carriage complete, would cost about 250 *l.*, and if a considerable number were made, the average price is estimated at 220 *l.* each. A muzzle-loading gun with a mouth similar to that of the breech-loading gun proposed could be made considerably cheaper, but two men would be required to work it with safety instead of one.

I am, &c.
(signed) *John Adye*, Brigadier General,
Director of Artillery.

The Secretary, Trinity House, E.C.

Description of Proposed Fog-signal Gun.

Method of Construction.—(*See Drawing*).

The fore part of the gun consists of a barrel of bronze, open at both ends, the interior diameter being 5 inches and the length 21 inches. The barrel at the muzzle end opens out into the form of a parabola, whose equation is $y^2 = 25x$, on an inch scale; the focus is thus 6·25 inches in front of the muzzle; the greatest ordinate of the curve is 15 inches, and the greatest abscissa is therefore 9 inches.

The breech end of the barrel abuts in a close-fitting joint against the mouth of a chamber formed in a bronze wheel which contains five chambers.

This wheel revolves on two vertical trunnions, the lower being supported upon a hardened steel adjustable pivot to reduce friction. These chambers are 7 inches in depth, and like the barrel 5 inches in diameter.

The wheel revolves on a pivot, which also holds the barrel tightly against the mouth of the chamber.

By means of strong screws in rear the wheel can be pressed as close against the barrel as necessary.

A passage communicates through the top of the breech-carrier with the rear of each chamber. This passage is so arranged by means of a spring that the communication is interrupted except when a chamber is exactly opposite the barrel.

The gun is fired by means of an ordinary tube dropped into the top of the passage. The machine is fixed on a carriage with three trucks, two in rear and one in front, the latter being provided with a lever to facilitate charge of direction.

Objects to be attained.

These are three in number—

(*a.*) The maximum report with a given charge of powder, say 3 lb.
(*b.*) The greatest brilliancy of flash under the same restriction.
(*c.*) Safety in use and ease of working.

Maximum Report.

This must be taken to mean the most far-searching sound within certain limits of direction, since the signal is not required to be heard on land. The action of the charge appears to be to drive forward, by the sudden generation of gas, the column of air in the barrel, and to strike violently the mass of external air in front.

Drawing a straight line across the muzzle of the gun at right angles to the axis, it is found that behind this line the concussion is but slightly felt, but that at a few inches (the distance depending on the weight of the charge, size of gun, &c.) in front of the line the shock becomes much intensified. From this it appears that since the blow of the gas cannot readily drive away the mass of air in front, the concussive vibrations rush sharply out to the sides and presumably above and below; the state of the ground beneath the muzzle, when large charges are fired, confirms this view, and the mouth of the proposed gun is therefore expanded into a parabola with the hope of catching these vibrations and sending them forward, as is done with the parabolic light reflectors. The duration of the sound may also possibly be increased by this arrangement, and the barrel is constructed so as to vibrate as freely as possibly, with the same object.

Brilliancy of Flash.

This must depend greatly on the mechanical consumption of the charge.

The smaller grained powders burn up more rapidly than those of larger size, and the proposed gun is adapted for the ordinary L.G. or R.L.G. powders used in the service.

The more rapid the combustion the greater will be the force of the blow struck on the air in front, and the slow-burning pebble powder would therefore be much less efficacious for the present purpose than the powders above named.

A charge ignites most rapidly and burns up most completely when its form approaches that of a sphere. In the 5-inch bore the cartridge containing 3 lb. of powder will be about 5 inches long. A half-inch wad should be added inside the bag to prevent the too rapid exit of unburnt grains.

Blank cartridge appears to be fully consumed at a point about five or six diameters from the bottom of the chamber, and the total length now given, viz., 28 inches, is chosen with the object of just consuming the whole charge by the time it arrives at the muzzle and so producing the most brilliant flash. It is believed that a greater length of barrel would diminish both flash and report, while a less length would be insufficient to develop the full power of the charge.

Safety and Ease of Working.

The pressure of the gas generated by blank cartridge on the metal of the chamber is but small, in the present case about three tons on the square inch; there is, therefore, little danger of bursting. The chief risk lies in the possibility of a smouldering fragment of cartridge remaining in the bottom of the chamber which might ignite a fresh cartridge.

Five

Five chambers have, therefore, been placed round the circumference of the wheel, so that five times the usual interval must elapse between two discharges from the same chamber, a ratchet and pawl being fixed to prevent the gunner from turning the wheel the wrong way. A covered wheel-barrow, containing any required number of cartridges, should be brought from the magazine and placed on the left side of the gun. The gunner should place one, wad-end outwards, in the chamber next to be fired. He then, with the left hand, will press on the vent-lever, and disengage the wheel; his right hand pulls the wheel round by the handle, between each pair of chambers; on arriving in a line with the barrel, the vent spring clamps and fixes the wheel. The gunner drops the tube into the vent passage, and fires in the usual manner; he then proceeds with the next chamber in the same way. Sponging out and ramming home are entirely avoided by this method.

If intervals of five minutes are adopted, each chamber will be empty for 25 minutes, so that no burning fragments can remain. Should rapid firing be required, say at minute, or shorter intervals, any residue can be cleared away by a turn of the hand in the chamber.

Residue would rarely remain in the barrel; but if it did so would be of no importance, since the chamber is 1½ inch longer than the charge, and there is a wad in front of the powder.

If two men are to be employed in firing, the breech-loading apparatus could be dispensed with, and a considerable saving would result in first cost.

(signed) *F. A. Campbell,*
Colonel, Royal Artillery,
Superintendent, Royal Gun Factories.

1 April 1874.

Enclosure 2, in No. 2.

Sir, 22 April 1874.

I HAVE read the description, and inspected the drawings of the proposed fog-signal gun.

The thoroughness with which the problem has been thought out, and the completeness of the arrangements proposed to meet the objects in view, are in the highest degree satisfactory.

Hitherto the nature of the gun employed has made the minimum interval of firing 15 minutes. With far less trouble, and with far more safety, the shots with the proposed gun may succeed each other at intervals of five minutes.

Were the diminution even of this interval desirable, it is perfectly practicable.

As regards the use of the gun as a fog signal, I consider the proposition of the War Department a very decided step in advance.

I therefore recommend the acceptance of the Department's offer to construct a gun of the proposed description for the sum mentioned.

I do not know the comparative cost of bronze, and steel, or iron guns; but I assume that the bronze will be dearest, and that it is chosen in the present instance in consequence of the superior loudness of the report of the bronze gun.

Now the report of a gun, as affecting an observer close at hand, is made up of two factors, the sound due to the shock of the air by the violently expanding gas, and the sound derived from the vibrations of the gun, which to some extent rings like a bell. This latter, I apprehend, will disappear at considerable distances; but nobody is entitled to dogmatise on this point.

It ought to be decided by actual experiments. Hence, it appears to me desirable to have a second gun constructed of steel, or of iron, in all other respects similar to the bronze gun, and that a comparative trial be made at Woolwich, or elsewhere, to determine once for all the question whether, as regards sound at a distance, anything be gained by the employment of the more expensive metal.*

I have, &c.
(signed) *John Tyndall.*

Robin Allen, Esq.,
&c. &c. &c.

Enclosure 3, in No. 2.

PROPOSED FOG-SIGNAL GUN.

Sir, Trinity House, 1 May 1874.

PURSUANT to the reference of the Board under date the 14th ultimo, I have considered the drawing and description, prepared by the War Department, of a proposed fog-signal gun. The general design and details of the work appear to have received very careful consideration, and I am of opinion that the gun will be found to be a very considerable improvement over

* If the experiment here recommended should have been already made by competent observers, I, of course, should bow to their decision.

over those hitherto used as fog signals, in regard to rapidity of firing, safety, and maximum report.

I would, however, recommend for the consideration of the War Department, whether, for an experimental gun, the parabolic reflector at the mouth could not with safety be made removable, in order that the comparative value of this reflector and reflectors or projectors of other forms may be determined by actual experiment. I am of opinion that, for the purpose of projecting the sound seaward from a signal station, and to windward when the force of wind is sufficient to impair the efficiency of the signal in a certain direction, the addition of a conical iron projector or trumpet, similar in form to the trumpet of the "syren," now at the South Foreland, would increase considerably the efficiency of the gun. Experiments for determining this point could easily be made with the the proposed gun. I have, with a view of confirming my opinion, had a preliminary experiment made at the South Foreland with the "syren" trumpet and a common fowling-piece, alternate shots being fired through the trumpet, and in the open air by its side, but precisely in the same direction, the observations on the relative power of the sounds being made at a distance of half a mile and upwards, in the direction of the axis of the trumpet and gun. The report of the mechanic in charge of the experiments is as follows:—

"The axis of the "syren" was bearing west-half-south, and the shots fired in the open air were fired on the same bearing. I filled up the small end of the trumpet with wood, with a hole in its centre just large enough for the muzzle of the fowling-piece. I walked in a line with the axis of the "syren" towards Dover, having alternate shots fired at specified times, always finding the shots through the trumpet to be the loudest in the proportion of eight to five. I went as far as the hill at the back of Dover Castle, a distance of about two miles; there I could hear the shots through the trumpet very plainly, but the shots fired in the air were scarcely audible.

"During the trial the wind was blowing a moderate breeze from the north-east."

Drawing, &c. herewith.

I would beg to recommend the acceptance of the offer of the War Department to construct a gun for about 250 *l.*

I am, &c.

Robin Allen, Esq. (signed) *Jas. N. Douglass.*

— No. 3. —

Board of Trade to Trinity House.

(H. 3484.)

Board of Trade, Harbour Department,
Whitehall Gardens, S. W.,
6 June 1874.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 23rd ultimo, transmitting, with other enclosures, a specification and design received from the War Department for a specimen breech-loading bronze gun, to be employed as a fog signal, and requesting the sanction of the Board to the necessary expenditure for the same, estimated at 250 *l.*

In reply, I am now requested to convey to the Corporation of Trinity House the statutory sanction of the Board of Trade to the above expense.

I am, however, at the same time to call attention to the suggestion of Mr. Douglass, that the proposed parabolic mouth-piece should be made removable, and to state that this suggestion appears to the Board to be worthy of consideration.

The Board are also advised that holophones, which theoretically appear useful, have sometimes failed in practice, and that if any less expensive method can be obtained of testing the effect of that now proposed, it might be advisable to adopt it before incurring the considerable expense of the proposed gun. If, for example, the mouth-piece were fitted to one of the present guns, its usefulness could thereby be proved.

I am further to point out that, assuming the sound in the direction of the axis of the piece to be intensified by the parabolic reflector, it is questionable whether the dispersion of the sound might not be more limited by the same than by the common muzzle, and the effective sound consequently reduced by the concentration.

If this should prove to be the case, the gun might be made to revolve in arc, like the trumpet.

All the enclosures in your letter are herewith returned as requested.

I am, &c.

The Secretary, Trinity House. (signed) *C. Cecil Trevor.*

— No. 4. —

Trinity House to Board of Trade.

(H. 3824.)

Trinity House, London, E.C.,
8 June 1874.

Sir,

Adverting to recent experiments with respect to fog signals and to Dr. Tyndall's report thereon,* which I had lately the honour to forward for the information of the Board of Trade, I am now directed to state that the Elder Brethren have given consideration thereto, and have approved of the enclosed memorandum drawn up by the Deputy Master on the subject, and that deeming it advisable at once to proceed with the establishment of caloric horns on board the North-east Shipwash, South Sand Head, Shambles, and Cardigan Bay light vessels, and on one of the spare vessels (as a necessary precaution), they request statutory sanction to the expenses involved, which are computed as per approximate estimate by Mr. Douglass enclosed, as follows:—

Five light vessels at 1,250 *l.* = 6,250 *l.*

I am further to submit two estimates which have been prepared by direction of the Elder Brethren for steam syrens at Skerries and at St. Ann's, Milford, respectively, but in regard to which I am to state that a 32-inch caloric engine is now on its road from America, and that if the Elder Brethren's expectation that such an instrument may be made available for syrens be fulfilled, the large items for rain catch at Skerries, and for rain-catch and additional dwelling at Milford, will be saved, besides the difference of cost between skilled steam labour and the employment of an ordinary assistant keeper or an allowance (as at Hartland) to the keepers' wives.

In making these proposals, the Elder Brethren wish me to point out that none of these works will be remunerative nor the first outlay repaid, but that the present state of the Mercantile Marine Fund offers a favourable opportunity for their execution.

I am, &c.
(signed) *Robin Allen.*

The Assistant Secretary,
Harbour Department, Board of Trade.

Enclosure 1, in No. 4.

Fog Signals.

Memorandum by the Deputy Master upon Dr. *Tyndall's* Report on the Experiments at *South Foreland.*

At the close of a series of important investigations, undertaken with the desire of adding to the safety of navigation round our seaboard, to which a committee of the Elder Brethren, acting in concert with the Corporation's scientific adviser, have devoted many months of careful attention, it will be convenient, now that the report of Dr. Tyndall has been presented to the Board, to consider how far the conclusions arrived at may be practically and usefully applied.

Before entering, however, upon the subject matter of the report, it is due to the members of the committee, who have freely sacrificed their time and comfort during a protracted period, that the Board should record its acknowledgment of their careful prosecution of a long and arduous duty. And if this acknowledgment is due to the members of the committee, much more is it to be accorded to their distinguished scientific guide, Dr. Tyndall, who, at great inconvenience to himself, with serious encroachment on his valuable time, and frequently some personal discomfort, has applied himself to this investigation with characteristic patience and perseverance. Step by step, after repetitions almost wearying to those unversed in such trained and dispassionate habits of procedure, the conditions affecting the travelling power of sound have become clearer and clearer, old errors have been corrected, and a great advance has been made towards accurately estimating the value of sound signals; and the important knowledge has been acquired that the seaman's greatest enemy affords in itself aid to mitigate its worst evils. To Mr. Douglass, also, and his assistants, much credit is due for the very thorough and efficient manner in which they performed their

* This Report has been presented to Parliament, *see* Parliamentary Paper, No. 188 of Session 1874.

their duties in connection with this inquiry; and Mr. Douglass's assistance as a practical observer on board the yacht has, throughout the experiments, been of great service.

Observations at sea were commenced on the 19th of May 1873, after soms months previously employed by the engineering department in mounting the requisite instruments (the selection of which was based upon the report of the committee who had visited the fog-signal establishments of the North American sea-board), and in making such arrangements as were suggested by the experience of the Elder Brethren and Mr. Douglass, or by the views of Dr. Tyndall on the subject. From that time to the 21st of February 1874, on shore and at sea, the observations have been going on at short intervals, and frequently for weeks together.

Foremost among the practical results, is the important fact before alluded to, viz., that fog does not impede the transmission of sound (as has long been supposed), indeed it is shown that a foggy atmosphere is a highly favourable condition for the travelling of the sound wave; further, during heavy blinding rain or snow storms, the passage of sound through the air is not obstructed, indeed the observations of the committee in the former case record an increase in the power of the sounds either during or immediately after a rain storm; while the evidence of Dr. Tyndall of his Alpine experience with regard to falling snow, may be accepted as proving the latter. It may safely be concluded, therefore, that whenever the state of the weather is such as to render sound-signals necessary, the atmospheric conditions are most favourable for their efficient application, and it may aiso be concluded that under the conditions of weather above referred to, the range of the signals will be much greater than the limit laid down in the report as the result of the general observations. Turning to the action of the wind upon sound, the report confirms all previous experience, and shows that the most powerful sound fails to penetrate the opposing force of a strong wind to any considerable distance; but it is satisfactory to be assured that even against a moderate gale and unfavourable conditions for sound transmission, signals may be relied on for sending sound to a distance of two or three miles, and, under ordinary conditions of fog, considerably further. Having regard, however, to the variability of the sound range of the same instrument on different days, attributable to the varying conditions of the atmosphere, it is not possible to assert, positively, that any signal has an absolute range which may be relied upon at all times. The practice of the Elder Brethren of not publishing in their notices of fog-signals a maximum range of audibility, or of accepting isolated instances as every-day occurrences, is, therefore, amply justified. Happily, long ranges are not very necessary, inasmuch as the mariner does not need to hear a sound-signal at distances of 10, 15, or 20 miles. Dr. Tyndall quotes, in relation to this part of the subject, an opinion expressed by our late scientific adviser, Professor Faraday, "that a false promise to the mariner would be worse than no promise at all." The Brethren need scarcely be reminded that in so saying, our dear and venerated friend was simply giving utterance to the standard axiom of the Trinity House, as old, perhaps, as the corporation itself; viz., that safety is only to be found in certainty, and that anything which does not secure the latter condition is a foe, rather than a friend to the mariner. Bearing in mind, therefore, the liability to atmospheric interference, under ever varying conditions, as shown in the report, attention must next be directed to the instruments used in the investigation, and the conclusions arrived at with regard to each of them, so far as the inquiry has now advanced.

The instruments tried were the American syren, Holmes' trumpets, American, Canadian, and English steam whistles, and three guns. The effects obtained from all these instruments have varied in a remarkable manner at different times, but for general efficiency there is no doubt that the American syren takes the first place. It has shown the greatest penetrative power, especially where local noises have to be overcome; but at present it has the drawback of being worked by steam at the high pressure of 70 lbs., which is not only a serious element of danger, but entails considerable expense for fuel and labour. Mr. Douglass, however, tells us that the caloric engine will work the syren, and he confidently anticipates being able to do away with steam altogether, and so to render this instrument a safe, economical, and efficient signal for general adoption.

The air trumpet has, also, shown itself to be an efficient instrument, superior to the whistles, and sometimes equalling the syren. Its chief advantage is that it is blown by means of the caloric engine at something over 20 lbs. pressure, can be worked without skilled labour, and, avoiding the danger attendant upon the employment of steam or gunpowder, combines safety with economy, its clear musical note may be an element of distinctiveness capable of being developed so as to make it ultimately of some service in this respect. In actual practice there are one or two drawbacks to the use of reed instruments, such as the difficulty of tuning, liability of reeds cracking, &c. Such contingencies are not likely to arise in regard to the syren, and if the economy and simplicity of working by means of the caloric engine can be also applied to the more powerful syren, it seems clear that the result will be highly advantageous as a most useful combination of power, safety, and economy, well suited for fog-signal purposes. Nevertheless, the satisfactory performance of the trumpets during the late trials fully justifies their present employment as fog-signals.

Not so much can be said in favour of whistles. Throughout the trial their marked inferiority to the other instruments has been recorded. The American whistle, yielding a harsh roar when close at hand, was deafening, but its sound failed to penetrate to any useful distance. The Canadian whistle appears to have been better, but it also failed in general effective power, although occasionally it was heard at great distances, even obtaining superiority

riority over the other instruments, but this was of very rare occurrence. As a rule, the whistles were behind the syren, trumpet, and gun, and seem to have been dependent more than the other instruments on exceptional atmospheric conditions for yielding their best results. The general conclusion seems to be, therefore, that for practical purposes the steam whistles, as at present tried, are not proved to be advantageous as fog signals.

With respect to the usefulness of guns, it appears from the report that they possess certain disadvantages; viz., the short duration of the sound, the liability of that sound to be quenched by local noises, and its comparative inability to cope with an opposing wind. Dr. Tyndall nevertheless ranks the gun as a first-class signal, an opinion which long experience of its use confirms. The gun, as a signal, is well known to mariners; while the flash is also said to be of service in thick weather. With regard to the guns used in the experiment, it appears that the short 5½-inch howitzer, with a 3 lbs. charge, is superior to the long 18 pounder or the 13-inch mortar with the same charge, the howitzer having generally yielded a louder and more effective report. The subject of a special gun for fog-signal purposes is now under consideration, and it seems probable that both in effective power and facility of working, the gun may be rendered considerably more serviceable than hitherto.

From the foregoing observations, it will be seen that at present there are three kinds of instrument practically available for future service as fog signals; viz., the syren, the trumpet, and the gun; and as further experience is gained with regard to these instruments, it may reasonably be expected that great improvements will be made in them, and that the future results to be obtained from them will surpass those now recorded.

It will be well now to consider briefly one or two points in connection with the selection of a site for, and the instrument to be used as, a fog signal, when the locality has been determined upon. In the investigations the question as to the height above the sea at which it is desirable that a signal should be placed has received some attention, and the results show that it is advantageous that such signals should be placed at a considerable height above the sea level, in order to avoid the interference caused by the noise of waves breaking on the shore, the rattle of pebbles, &c.

The comparative trial made between a pair of horns on the summit of the South Foreland Cliff and another pair 200 feet below, close to the sea surface, proved, with scarcely an exception, that the higher horns were superior to the lower ones. From this it would appear to be advisable, where possible, to place the signal high above the sea; but there are positions on our coasts where fog signals are necessary, and yet where no considerable elevation could be obtained, notably Dungeness, Orfordness, &c.; for such positions, therefore, a large and powerful syren would be very suitable, as being able to overcome the noises of the sea-shore. For river banks, light vessels, and other places undisturbed by interfering noises, a smaller instrument of the same description, or a trumpet, would prove serviceable; and the gun will be a fit signal for such places as are of some elevation clear above the sea, without adjacent outlying rocks, and which vessels may approach "close to." It is not intended in the above suggestions to lay down any system which shall be invariably followed in the allocation of the signals, but having regard to the performance of the instruments referred to, as shown in the report, the foregoing observations may be regarded as indicating, to some extent, how the respective merits of the instruments may be most usefully applied.

Whilst upon the subject of fog-signal sites, allusion may be made to the caution conveyed in the Report, that in selecting the position for a fog signal the possible influence of sound shadow must be taken into account. This is a point to which reference was made in the Report of your committee to America, it being therein recorded that in the experiments carried out at Portland Bay, United States, the effect of a sound shadow was distinctly experienced; and your committee stated in their Report, that, "in selecting the site for a fog signal, care must be taken that no outlying point or cliff shall interfere with the arc of sound." It is satisfactory to find the conclusion of that committee on this point entirely borne out by the investigations of another.

Another important conclusion to be drawn from this Report in regard to the question of sites, is that no signal should be required to mark dangers extending seaward more than a mile, or a mile and a quarter. The minimum effective range of a signal being 2¾ miles, vessels approaching such dangers and coming into the sound range would have room to manœuvre, and be able to keep at a safe distance. This is of course taking the maximum range of the signals, as stated in the Report; but it is more than probable, as has been stated previously, that in foggy weather the sound range being extended further than the minimum limit referred to, a larger range may be allowed.

Another important consideration has to be borne in mind, viz., the direction in which sound should be projected. As the sound of a signal is ascertained to be most effective in the line of its axis, it follows that the instrument should be capable of such adjustment that its strongest sound may be projected directly against the opposing wind.

It is to be observed that on another point these experiments confirm the opinions expressed by your committee to America, for with regard to the question of distinctions, it is clearly shown that it is not possible to rely upon distinctiveness of note alone, for the mariner would not appreciate such a distinction; indeed the "syren's" horns and whistles have invariably been spoken of by sailors in the vicinity as "the fog-horns." Between the report of the gun and the sound of the syren, or the trumpet, there is a perfectly intelligible difference; but for further purposes of distinction for the latter instruments, the variation of the length of the silent interval between each blast offers the most satisfactory means. With regard to this point, it will be perceived that Dr. Tyndall has, with some reservation, expressed an opinion which hardly seems to harmonise with the experience of

the Elder Brethren; Dr. Tyndall would restrict the silent interval to a length of 30 seconds and in support of his opinion draws an analogy between the action of the eye and the ear which does not commend itself to actual nautical experience. The Board will probably not be disposed to waive a clear advantage in power and great scope for distinctiveness, in order that the longest interval of silence should not exceed 30 seconds, especially with the knowledge that guns fired even at intervals of a quarter of an hour have proved of great service to the mariner hitherto.

A general review of the entire Report shows that a considerable amount of knowledge has been gained both as to the influence of the atmosphere in the transmission of sound, and to what extent the appliances we possess may be relied on for producing such sounds as will be of practical service to the mariner. We have learned something of our ignorance in regard to sound transmission; we now know that the varying conditions of the atmosphere render no judgment infallible, and that conclusions, founded on the experience of to-day, are not trustworthy for estimating the results of to-morrow. We know, moreover, that after bringing forward all the aid which science can at present give to guide the mariner in thick weather, there is still a large element of uncertainty and mystifying influence with which he has to combat, and which renders it incumbent on him to use the greatest caution and prudence in thick weather, to regard and make use of the sound signals as means for assuring the vessel's position, and not as aids for running at high speed; and above all, never to trust so implicitly to sound signals as to neglect the use of the seamen's best friend and truest guide, the lead.

The subject of fog signals has by means of this investigation received a great impetus; it may fairly be said that we have taken a considerable step in advance, and it only remains to follow it up. As we go forward our experience will widen, and although it is more than probable that a few years of practical experience and testing of fog signals will materially modify our present views and improve considerably the instruments we have, yet we now know how to go forward, and in what direction to bend our efforts. It is to be hoped that before very long our coasts will be guarded by a complete chain of sound signals, all effective and useful to the mariner; no unnecessary delay need now occur before proceeding to supply the light-ships and the important stations already selected by the Board, and when they are all established, the lights rendered useless at a quarter of a mile by fog will be superseded by sound signals capable of warning the mariner at a minimum distance of three miles.

It is almost unnecessary to add that in thus giving practical effect to the spirit of the recommendations of this valuable Report, the Elder Brethren will have the satisfaction of knowing they are acting in the highest interests of humanity, and conferring an inestimable boon on the nautical community at large.

Fred. Arrow.

Enclosure 2, in No. 4.

Sir, Trinity House, 5 June 1874.

In compliance with the reference of the Board, under date 2nd instant, I beg to submit herewith an approximate estimate of the cost of fitting five light vessels with fog-horns sounded by air compressed by caloric engines, as follows, viz.:

	£.
A 24-inch caloric engine, as now in use on board the "Seven Stones," and "Owers," with air reservoir and horn, &c. complete, the horn having either a reed or disc vibrator	600
Duplicate apparatus	600
Fixing on board	50
Total Cost of each Apparatus £.	1,250

I am, &c.

Robin Allen, Esq. (signed) *Jas. N. Douglass.*

Enclosure 3, in No. 4.

Skerries.

Sir, Trinity House, 5 June 1874.

In compliance with the reference of the Board, under date 2nd instant, I beg to submit herewith an approximate estimate of the cost of a steam syren of the power of the instrument

ment now at the South Foreland, fixed complete at the Skerries, together with the cost of the necessary buildings and water supply, as follows, viz.:

	£.
Steam syren with boiler, complete	750
Duplicate apparatus	750
Buildings for boilers, syren, and fuel	900
Rain catch, and tanks for storage of water	800
Superintendence	75
	3,275
To the above is to be added the cost of the proposed mineral oil store, which I would recommend be erected with the other works	200
£.	3,475

One skilled attendant will be required (to take charge of the steam boilers) in addition to the two light-keepers now at Skerries, but no additions to the present dwellings will be required.

I am, &c.
(signed) *Jas. N. Douglass.*

Robin Allen, Esq.

Enclosure 4, in No. 4.

St. Ann's.

Sir, Trinity House, 5 June 1874.

In compliance with the reference of the Board, under date 2nd instant, I beg to submit herewith an approximate estimate of the cost of a steam syren of the power of the instrument now at the South Foreland, fixed complete at the St. Ann's lighthouses, together with the cost of the necessary buildings and water supply, as follows, viz.:—

	£.
Steam syren with boiler, complete	750
Duplicate apparatus	750
Buildings for boilers, syren, and fuel	800
Rain catch and tanks for storage of water	700
Dwelling for one skilled attendant, who will be required in addition to the four light-keepers now at St. Ann's	600
Superintendence	75
£.	3,675
To the above is to be added the cost of the proposed mineral oil store, which I would recommend be executed with the other works	300
£.	3,975

I am, &c.
(signed) *Jas. N. Douglass.*

Robin Allen, Esq.

No. 5.

Trinity House to Board of Trade.

(H. 3870).

Sir, Trinity House, London, E.C., 10 June 1874.

Adverting to my letter, dated 8th instant, on the subject of fog signals, and to the estimate from Mr. Douglass therein contained, for the establishment of horns on board lightships computed at 1,250 *l.* each, I am directed to enclose, for the information of the Board of Trade, copy of another report on the same subject, from which it will be seen that upon going into the details of construction and position, duplication of parts, &c., Mr. Douglass is of opinion that each instrument may be fitted on board complete for the sum of 950 *l.* It will, therefore,

fore, not be necessary to obtain statutory sanction as respects the five light vessels referred to in my letter for a larger aggregate sum than 4,750 *l.*

I am, &c.

The Assistant Secretary, (signed) *Robin Allen.*
Harbour Department, Board of Trade.

Enclosure in No. 5.

Sir, Trinity House, 9 June 1874.

I BEG to submit herewith a design for the compressed air fog horns for light vessels, referred to in my report and estimate dated 5th instant.

I would recommend that the apparatus consist of a pair of 24-inch cylinder caloric engines, with a single horn of cast-iron and a strong wrought-iron reservoir for compressed air; all the working parts connected with the horn to be in duplicate. The reservoir for the compressed air is proposed to be placed between decks, and the horn is proposed to be attached to the air vessel and carried through the deck, and supported at its upper end 9 feet above the deck, as shown, where by the aid of a wheel and pinion, its mouth can easily be adjusted to windward.

The horn can be sounded either by a syren disc rotated by the caloric engine, as shown, or by a reed vibrator. The cost would be nearly the same in either case. I would, however, recommend that a trial of both be made.

I estimate the cost of the apparatus in accordance with the design, fixed on board complete, at 950 *l.*

I am, &c.

Robin Allen, Esq. (signed) *J. N. Douglass.*

— No. 6. —

Board of Trade to Trinity House.

(H. 3870.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W.,
25 June 1874.

Sir,

THE Board of Trade have perused with the greatest interest the lucid and able report by Professor Tyndall on recent experiments on fog signals at sea which accompanied your letter of the 24th of April last. This exhaustive paper has, as the Corporation of Trinity House are aware, been presented to Parliament, and has been printed by order of the House of Commons.*

The Board have also received and considered your letter of the 8th instant, transmitting copy of a memorandum by the Deputy Master of the Trinity House on the Professor's report, together with estimates of the cost of fitting caloric horns on board the North-East Shipwash, South Sand Head, Shambles, and Cardigan Bay light vessels, and on one of the spare light ships, and approximate estimates of the expense of steam sirens and works in connection therewith at Skerries and St. Ann's stations. Your further letter of the 10th instant, modifying the estimate of expense as regards the caloric horns, has also been received.

I am now desired by the Board of Trade to convey to the Corporation the statutory sanction of this Department to the expenditure of 3,475 *l.* at Skerries, and 3,975 *l.* at St. Ann's, on the understanding, however, that these estimates are liable to reduction should the 32-inch caloric engine, now on its way from America, be available for use with sirens as anticipated.

The Board also sanction the expenditure, as estimated in your letter of the 10th instant, of 4,750 *l.* for fitting caloric horns on the five light ships enumerated above.

I am to return, as requested, the enclosures received in your letter of the 8th instant, together with the drawing accompanying your communication of the 10th instant.

I am, &c.

The Secretary, Trinity House. (signed) *C. Cecil Trevor.*

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* No. 188, of Session 1874.

— No. 7. —

Trinity House to Board of Trade.

(H. 647.)

Trinity House, London, E.C.,
22 January 1875.

Sir,

I AM directed to forward to you herewith, for the statutory sanction of the Board of Trade, a tender received from Mr. Holmes for the supply of eleven sets of fog signals for light vessels, each set consisting of horn and caloric engines in duplicate, at a total cost of 12,650 *l.*

The stations proposed to be fitted in the coming year are thirteen in all, of which five have been already submitted to, and sanctioned by, the Board of Trade under your letter of the 25th June last (H. 3870). In providing for the five so sanctioned, the caloric engines were at once ordered, two sets from the Delamater Company and three from Professor Holmes, the provision of horns for them being held in abeyance until after the construction and trial of a pattern horn at the workshops. The tender now submitted is to include both engines and horn complete, and it is understood that the engines already in course of construction by Professor Holmes shall form part of the supply under this contract.

The schedule hereunder given shows the stations to which the signals thus contracted for are to be fitted, distinguishing those for which sanction has already been obtained.

I am, &c.
(signed) *Robin Allen.*

The Assistant Secretary,
Harbour Department, Board of Trade, S.W.

SCHEDULE.

FOG SIGNALS.—1875.

Thirteen Stations.	In Hand.	Present Tender.
Spurn	-	Holmes.
Outer Dowsing	-	- ditto.
Shipwash	Holmes	- ditto.
Kentish Knock	-	- ditto.
South Sand Head	Holmes	- ditto.
Shambles	Holmes	- ditto.
Helwicks	-	- ditto.
Scarweather	-	- ditto.
Cardigan Bay	Delamater	—
Carnarvon Bay	-	Holmes.
Morecambe Bay	-	- ditto.
Bahama Bank	-	- ditto.
Spare	Delamater	—
	5	11

Note.—The Stations printed in *italics* are those already sanctioned.

— No. 8. —

Board of Trade to Trinity House.

(H. 647.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W.,
2 February 1875.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 22nd ultimo, forwarding a tender for the supply of eleven sets of fog signals for light vessels, each set consisting of horn and caloric engine in duplicate, at a total cost of 12,650 *l.*

I am in the first place to point out that the cost of each of the eleven signals would appear from your letter to be 1,150 *l.*, whereas the revised estimate of Mr. Douglass (forwarded in your letter of the 10th June last) was 950 *l.* for the apparatus fixed on board complete. The Board will be glad to receive an explanation of this apparent difference.

No. 5.

I am further to observe that the tender mentions "floating lights; syren for fog signal apparatus," and to request that it may be stated whether (as the Board infer from your letter) it is now proposed to fit the horns with siren discs instead of the reed vibrator of which trial was also to be made.

I am also to remark that the tender of the Delamater Company for the apparatus now in process of construction by them does not appear to have been yet submitted to the Board of Trade.

I am, &c.

The Secretary to the Trinity House. (signed) *C. Cecil Trevor.*

— No. 9. —

Trinity House to Board of Trade.

(H. 1084.)

Trinity House, London, E.C.,
4 February 1875.

Sir,

HAVING laid before the Elder Brethren your letter of the 2nd instant, requesting, with reference to the tender of Professor Holmes to supply 11 sets of fog signals for light vessels, an explanation of the difference between the price of each set as tendered (1,150 *l.*), and that estimated by Mr. Douglass (950 *l.*) on the 9th June last, I am directed to acquaint you that, in further considering the designs for the syren apparatus, it was found that a first class syren could be used instead of one of the second class, as originally estimated, and that an additional air-receiver would be required, which, together with the necessary base plate and fittings, account for the increase in price, while the arrangement adds considerably to the effectiveness of the instrument.

In reply to the question as to the adoption of syren discs in preference to reed vibrators, I am to state that in practice the reed vibrators are liable to crack, and are subject to other disadvantages which more or less detract from the efficiency of the signal. The syren discs offer no such practical difficulties, and are preferred accordingly.

The engines obtained from the Delamater Company, referred to in the concluding paragraph of your letter, were not procured by tender, but were ordered at the prices set down in their tariff, copy of which is herewith sent.

The prices do not include the cost of transit, insurance, &c.

I am, &c.

The Assistant Secretary,
Harbour Department, Board of Trade, S.W. (signed) *J. Inglis.*

Enclosure in No. 9.

ERICSSON CALORIC ENGINES, for Safety, Efficiency, Economy, and Durability, unequalled.

THEY use no water, but little fuel, require no engineer, do not raise the rates of insurance, are portable, and occupy but little space. Can be set up and run by anyone.

Twelve years of practical working, by the thousands of these engines in use, have demonstrated beyond cavil their superiority where less than eight-horse power is required. Many improvements in construction have been introduced, making them comparatively noiseless, and much more durable and efficient than when first offered to the public.

These works are now prepared to furnish engines at reduced prices, and so well built that they are warranted, in every instance, to give satisfaction.

Delamater Iron Works,
Foot West 13th Street, New York.

ERICSSON CALORIC PUMPING ENGINE.

Sizes, Cylinder.	Size of Pumps.	Height of Column of Water.	Coal per Day.	U. S. Gallons per Hour.	Price with Pumps.
					Dollars.
9 inch - - -	2 inch -	100 feet -	18 lbs.	350	250
	2½ „ -	60 „ -		550	
12 „ - - -	3 „ -	90 „ -	25 „	600	475
	4 „ -	50 „ -		1,050	
15 „ - - -	3½ „ -	110 „ -	35 „	675	625
	4¼ „ -	65 „ -		1,125	
18 „ - - -	3 „ -	185 „ -	50 „	700	875
	5 „ -	80 „ -		1,800	
24 „ - - -	4 „ -	290 „ -	90 „	1,400	1,225
	8 „ -	55 „ -		5,500	
32 „ - - -	4½ „ -	290 „ -	175 „	1,700	2,250
	12 „ -	40 „ -		12,000	

ERICSSON CALORIC ENGINES.

Size of Cylinder.	Horse Power.	Space occupied in Inches.	Revolutions per Minute.	Coal per Day.	Weight in Pounds.	Price.
				Lbs.		*Dollars.*
12 inches -	½ -	42 × 23	60	26	800	400
15 „ -	¾	48 × 26	50	35	1,700	550
18 „ -	1½	60 × 30	45	50	2,500	800
24 „ -	3	72 × 40	40	90	4,000	1,100
32 „ -	6	108 × 50	35	175	7,000	1,850

— No. 10. —

Board of Trade to Trinity House.

(H. 1084.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W.,
12 February 1875.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 4th instant, further on the subject of the proposed supply of fog signals for the light-vessel service.

 I am

I am now to signify the sanction of the Board to the acceptance of Mr. Holmes' offer, forwarded in your letter of the 22nd ultimo, No. 409, to supply 11 sets of signals, each set consisting of horn and caloric engine in duplicate, for 12,650 *l.*

* * * * *

I am, &c.

The Secretary to the Trinity House. (signed) *C. Cecil Trevor.*

— No. 11. —

Trinity House to Board of Trade.

(H. 1839.)

Trinity House, London, E.C.,
1 March 1875.

Sir,

In the Estimates for the current financial year provision is made, under the head of Abstract L., New Works, for the establishment of fog signals at the Outer Fern and at Start Point.

In my letter, dated 8th June last, it was stated that a 32-inch caloric engine was then on its way from America, and that the Elder Brethren had some expectation of being able to adapt it to work a syren. Since that time the anticipated adaptation has proved to be practicable, and arrangements have been made for establishing syrens worked with compressed air by caloric engines at the two land stations of Skerries and St. Ann's, Milford, referred to in my said letter, and in your reply thereto, dated 25th June 1874, which, on the receipt of a tender now under invitation, will be explained in detail to the Board of Trade.

The Elder Brethren have only recently learned, however, that Messrs. Brown & Co., of New York, are applying the caloric engine and compressed air method to the sounding of syren signals, and they have accordingly obtained a tender from that firm for the supply of two sets of signals, for the sum of 13,800 dollars, or about 2,875 *l.* The cost of each set would therefore be 1,437 *l.* 10 *s.*, to which must be added, for freight and packing, and expenses of delivery, about 120 *l.*, making 1,557 *l.* 10 *s.* altogether. The price at which a set is expected to be made in England is estimated at 1,800 *l.* In the absence of drawings or detailed description of the American machines, it is impossible to tell how the difference is accounted for, but I am directed to submit herewith the estimate of Messrs. Brown & Co., of New York, and to request their Lordships' statutory sanction to its acceptance, in order that one set may be applied at the Outer Fern and the other at Start Point. The provision for buildings will be submitted when further particulars are known respecting the machines.

* * * * *

I am, &c.

The Assistant Secretary,
Harbour Department, Board of Trade. (signed) *J. Inglis.*

Enclosure in No. 11.

Dear Sir, New York, 30 January 1875.

In reply to your cable message, we propose to build for you within four months after receipt of the order, two (2) of our patent syren trumpets, each with two (2) of our improved caloric engines, with cylinder of 32-inch diameter by 20-inch stroke, and two (2) air vessels 9 feet high by 5 feet diameter, and 20 to 30 pounds pressure, automatic movement for opening and closing the blow, and of the same construction as these we are making for the Northern Lighthouses, Edinburgh, and for the same price, viz., thirteen thousand and eight hundred dollars (13,800), and two (2) of our patent syren trumpets with engine pumps and movements for the sum of 4,100 dollars.

The price of one of our steam syren trumpets, with a 25-horse power locomotive boiler, of which we enclose cut, is 3,500 dollars.

Boxing and shipping, extra terms, cash on presentation of shipping receipts to a house in this city.

Awaiting your orders,

We remain, &c.

Robin Allen, Esq., Secretary,
Trinity House, London, E.C. (signed) *A. F. Brown.*

— No. 12. —

Trinity House to Board of Trade.

(H. 1933.)

Trinity House, London, E.C.,
2 March 1875.

Sir,

I AM directed to transmit herewith, for the statutory sanction of the Board of Trade, the annual Estimates of expenditure in the year ending 31st March 1876, for lighthouses, &c., within the jurisdiction of this Corporation, showing a total of 276,229 *l.* 7 *s.* 1 *d.* for all services.

On comparison of this total with the corresponding sum in the Estimates of the year 1874-75 now current, a decrease will be found of 8,063 *l.* 3 *s.* 11 *d.*

* * * * *

The works in connection with fog signals continue in this as in last year's Estimates, as the sums incurred for the works in hand connected with them will for the most part become payable in the coming financial year.

* * * * *

I am, &c.

The Assistant Secretary,
Harbour Department, Board of Trade.

(signed) *Robin Allen.*

Enclosure in No. 12.

ESTIMATES, 1875–76.

ABSTRACT (L).—NEW WORKS. FOG SIGNALS.

No. 1874-75.	No. 1875-76.	PARTICULARS. Station.		Engineer's Estimate.	Already Expended.	1875–76. £. s. d.	1874–75. £. s. d.	Increase. £. s. d.	Decrease. £. s. d.
		Fern (Outer)	Lighthouse	- -	- -	3,000 - -	2,500 - -	(*i*) 500 - -	—
		Souter Point	,,	Already established.		—	—	—	—
		Flamborough	,,	Already established.		—	—	—	—
		Spurn	Light vessel	- -	- -	1,150 - -	1,200 - -	- -	(*i*) 50 - -
		Outer Dowsing	,,	- -	- -	1,150 - -	- -	(*k*)1,150 - -	—
		Newarp	,,	Already established.		—	—	—	—
		Shipwash	,,	- -	- -	1,150 - -	1,200 - -	- -	(*i*) 50 - -
		Kentish Knock	,,	- -	- -	1,150 - -	- -	(*k*)1,150 - -	—
		South Sand Head	,,	- -	- -	1,150 - -	1,200 - -	- -	(*i*) 50 - -
		Dungeness	Lighthouse	Already established.		—	—	—	—
		Owers	Light vessel	Already established.		—	—	—	—
		Shambles	,,	- -	- -	1,150 - -	- -	(*k*)1,150 - -	—
		St. Catherine's	Lighthouse	Already established.		—	—	—	—
		Start	,,	- -	- -	3,200 - -	2,500 - -	(*i*) 700 - -	—
		Lizard	,,	- -	- -	- -	2,500 - -	- -	(*l*)2,500 - -
		Seven Stones	Light vessel	Already established.		—	—	—	—
		Longships	Lighthouse	- -	- -	- -	2,500 - -	- -	(*m*)2,500 - -
		Hartland Point	,,	Already established.		—	—	—	—
		Lundy	,,	Already established.		—	—	—	—
		Helwicks	Light vessel	- -	- -	1,150 - -	- -	(*k*)1,150 - -	—
		Scarweather	,,	- -	- -	1,150 - -	1,200 - -	- -	(*i*) 50 - -
		Milford	Lighthouse	- -	- -	3,500 - -	- -	(*k*)3,500 - -	—
		South Bishop	,,	- -	- -	3,000 - -	- -	(*k*)3,000 - -	—
		Smalls	,,	—	—	—	—	—	—
		Cardigan Bay	Light vessel	- -	- -	1,150 - -	- -	(*k*)1,150 - -	—
		Bardsey	Lighthouse	- -	- -	3,000 - -	2,500 - -	(*i*) 500 - -	—
		Carnarvon Bay	Light vessel	- -	- -	1,150 - -	- -	(*k*)1,150 - -	—
		North Stack	Fog-gun	Already established.		—	—	—	—
		Skerries	Lighthouse	- -	- -	3,000 - -	2,500 - -	(*i*) 500 - -	—
		Morecambe Bay	Light vessel	- -	- -	1,150 - -	1,200 - -	- -	(*i*) 50 - -
		Bahama Bank	,,	- -	- -	1,150 - -	- -	(*k*)1,150 - -	—
		Spare	,,	- -	- -	1,150 - -	1,200 - -	- -	(*i*) 50 - -
					£.	33,650 - -	22,200 - -	—	—

(*i*) Estimate more exactly determined than last year.
(*k*) Complete system of signals not altogether settled when last year's Estimates were submitted.
(*l*) Included under general re-organisation of the establishment, at *supra*, 16,200 *l.*
(*m*) Not considered practicable at present; item withdrawn.

N.B.—These Estimates were sanctioned by the Board of Trade on the 15th May 1875.

— No. 13. —

Board of Trade to Trinity House.

(H. 1839.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W.,
8 March 1875.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 1st instant, enclosing an estimate from Messrs. A. & F. Brown, of New York, of the cost of their patent siren trumpets and caloric engines, and requesting the sanction of this Department to obtaining from that firm two sets of signals for Outer Fern and Start Point Stations respectively.

In reply, I am now to convey to the Corporation of Trinity House the sanction of the Board of Trade to an expenditure of 13,800 dollars, or say 2,875 *l*, for the purchase of the signals in question, each consisting of a siren trumpet caloric engine and air vessels, and also to the expense of freight, packing, and delivery.

The estimate of Messrs. Brown is herewith returned.

I am, &c.

The Secretary, Trinity House. (signed) *C. Cecil Trevor.*

— No. 14. —

Trinity House to Board of Trade.

(H. 4380.)

Trinity House, London, E.C.,
26 May 1875.

Sir,

ADVERTING to previous correspondence on the subject of the possible improvements in guns for fog signals, I am now directed to forward, for the information of the Board of Trade, enclosures (14 in number) relating to this subject, from which it will be perceived that great care and attention has been given to the matter, and that some most valuable points have been determined.

I am to add that so soon as the last report from Woolwich has been carefully weighed, and the proper course as to the final experiments settled, a further communication shall be made to you on the subject.

I am, &c.

The Assistant Secretary, (signed) *Robin Allen.*
Harbour Department, Board of Trade.

Enclosure 1, in No. 14.

Trinity House, 13 August 1874.

Sir,

PURSUANT to the reference of the Board, under date 17th June, I have to submit the following observations on the suggestions contained in the letter of the Board of Trade, under date 6th June, relative to the proposed experimental fog-signal gun. Their suggestions are as follows, viz.:

1. That holophones, which theoretically appear useful, have sometimes failed in practice, and that, if any less expensive method can be obtained of testing the effect of that now proposed, it might be advisable to adopt it before incurring the considerable expense of the proposed gun. If, for example, the mouthpiece were fitted to one of the present guns, its usefulness could be thereby proved.

2. That, assuming the sound in the direction of the axis of the piece to be intensified by the parabolic reflector, it is questionable whether the dispersion of the sound might not be more limited by the same than by the common muzzle, and the effective sound consequently reduced by the concentration. If this should prove to be the case, the gun might be made to revolve in an open arc, like the trumpet.

The

The observations I have to submit on the above suggestions are as follows, viz. :—

1. The syren, which has proved itself throughout the recent experiments at the South Foreland to be the most efficient instrument, is really a holophone, and its efficiency in sounding to windward is doubtless in a great measure due to its perfection in this respect. This appears to suggest the trial of holophones of similar form for guns; but the experiments might be carried out inexpensively with holophones of various forms for use with very small guns, or even pistols.

2. Assuming that the gun can be rendered as perfect, or nearly so, as the syren for projecting its sound in the direction of its axis, its efficiency as a fog signal would, I think, be considerably improved; but, to secure the full benefit of the increased efficiency, it would doubtless be desirable—as recommended by Dr. Tyndall in the case of the syren—"to confer upon the instrument the power of rotation, so as to enable the person in charge of it to point its trumpet against the wind, or in any other required direction."

I am, &c.,

Robin Allen, Esq. (signed) *James N. Douglass.*

Enclosure 2, in No. 14.

Trinity House, London, E.C.,
6 October 1874.

Sir,

With reference to previous correspondence on the subject of the construction of a special gun for fog signal purposes, I am now directed to transmit to you, as requested by your letter of 10th April last, the accompanying copies of the Reports of Dr. Tyndall and Mr. Douglass (the Corporation's Engineer) thereupon. The various points referred to by those gentlemen will, no doubt, receive the best attention of the War Department; but the Elder Brethren direct me to observe that they consider it very desirable that the gun should be capable of being turned, so as to point in any direction required, and they would be glad to learn in what manner this could be best effected. In the meantime I am to request that you will be so good as to give instructions for the manufacture of the proposed gun to be at once proceeded with.

See Enclosures 2 and 3, in No. 2,

I am, &c.

Brigadier General Sir J. M. Adye, K.C.B., (signed) *Robin Allen.*
Director of Artillery and Stores, War Office.

Enclosure 3, in No. 14.

Surveyor-General's Department,
War Office,
29 October, 1874.

Sir,

I am directed by the Surveyor General of the Ordnance to acknowledge the receipt of your letter of the 6th instant, and to acquaint you that, in accordance with the wishes of the Elder Brethren of the Trinity House, orders have been given to the Superintendent, Royal Gun Factories, to proceed with the manufacture of the special gun for fog signal purposes, the design for which was submitted by that officer in April last.

I am also to enclose, for the information of the Elder Brethren, the further remarks of Colonel Campbell, C.B., R.A., upon the enclosures of your letter now under acknowledgment, and to state that, anticipating their wishes as regards the preliminary trials which that officer suggests, directions have been given to him to proceed accordingly; and your attention is now particularly drawn to the proposal in the last paragraph but one, as to the co-operation of Professor Tyndall and Mr. Douglass.

I am, &c.
(signed) *John Adye,*
Brigadier-General, Director of Artillery.

The Secretary to the Trinity House, E.C.

Royal Gun Factories, Woolwich.

Report on further Communication received from Trinity Board respecting Fog Signal Gun.

The Elder Brethren state that it is "very desirable that the gun should be capable of being turned in any direction required, and that they would be glad to learn in what manner this could be best effected."

The original description provided for this to a limited extent, that is, the gun and carriage could be turned by a lever or handspike with but little trouble, supposing the shift to be required but occasionally.

If it is wished that the direction should be capable of easy alteration for every round

fired, it will be necessary to devise a mode of traversing which will involve less labour. This will offer no difficulty, but early information is requested on the following points :—

1. What is the greatest angle from right to left through which the gun is required to traverse ?

2. Is the gun to be fired entirely in the open air, or is it to be placed in a building or shed.

3. If the latter, do the erections already exist, and what is their nature, or may they be constructed to suit the gun ?

With reference to the material of the gun, Professor Tyndall is correct in supposing that bronze was selected chiefly on account of its sonorous qualities; but besides this reason, in psoposing a single experimental gun of such novel design, it is not thought desirable to employ a metal so uncertain and brittle as cast-iron, although a considerable reduction in price would result if this metal was found to be suitable as regards the production of sound and resistance to the destructive effect of the vibrations. It is therefore strongly recommended that the first gun, at any rate, should be of bronze; the price (250 *l.*) will include certain patterns, &c., which will remain available for other guns of the same form, and if it be desired to try a cast-iron gun also, this second gun could be supplied at a cost of about 110 *l.* in addition. No reduction in price would be gained by employing steel.

The points raised by Professor Tyndall and Mr. Douglass, viz. : The nature of material and the form of mouth can, however, be more cheaply and satisfactorily set at rest by a simple experiment, which can be conducted at Woolwich during the manufacture of the patterns for the fog signal gun ordered. It will cost but little to construct cylinders as shown in accompanying drawing. Four would be required, and an estimate of their cost is furnished on a separate sheet herewith.

Cylinder No. 1 should be of bronze with parabolic mouth.

No. 2 should be precisely similar to No. 1, except in the material, which should be cast-iron.

No. 3 should be precisely similar to No. 2, except in the form of mouth, which should be conical.

No. 4 should be precisely similar to No. 3, except that it should have no mouth, but be finished like an ordinary gun.

The reflecting surface of the cone is shown equal in area to that of the parabolic mouth; the angle of the cone is put at 60 degrees, as being probably about the lowest that could be expected to resist the charge, but any other angle can be adopted if preferred.

It is proposed to make the diameter of the bores of these experimental cylinders two inches ; a cartridge two inches in length by two inches in diameter will contain a quarter of a pound of powder. If this quantity should not be considered large enough for the experiment, the cylinders could of course be made of any dimensions preferred.

It will take some time to complete the patterns and tools for making the fog-signal gun, and if the above experiment be approved *at once*, it can be accomplished without causing delay. It can be conveniently carried out by placing the four cylinders on the top of the Proof Butt in the Arsenal, with their muzzles pointing down the small-arm range, along which are measured distances up to 1,200 yards. The steep slope of the butt on that side would resemble a cliff, and the roughish grass-grown ground along the range would probably offer some analogy in reflecting power to the surface of a moderately calm sea.

Should the above experiment be sanctioned, it is scarcely necessary to say that the co-operation of Professor Tyndall and Mr. Douglass would be of the greatest advantage.

The cylinders can be got ready in about a fortnight from date of approval, and it might be desirable to hasten the trial, in order to take advantage of the November fogs, which are often exceedingly thick in the Arsenal.

(signed) *F. A. Campbell,*
22 October 1874. Superintendent, Royal Gun Factories.

	£.	s.	d.
Estimated cost of cast-iron fog-signal gun, if made *in addition* to bronze gun, the patterns, &c. being charged to bronze gun -	110	–	–

	£.	s.	d.	
Cost of bronze cylinder with parabolic mouth - -	7	1	6	Internal diameter = 2
Cost of cast-iron cylinder with parabolic mouth -	2	10	–	
Ditto, with conical mouth - - - - -	2	10	–	
Ditto, without mouth - - - - - -	2	6	–	

Reduction from the above on returning cylinders as old metal :—

	£.	s.	d.
Bronze	2	10	–
Cast iron	–	3	–

[The foregoing was communicated to Dr. Tyndall.]

Enclosure 4, in No. 14.

Sir, Royal Institution, 9 November 1874.

I SHALL use my best efforts to be present at such experiments as may be made as to the sound-producing power of the projected new gun.

It is doubtless not without consideration that bronze has been fixed upon as the material for the gun. I can hardly imagine any other quality of the metal than its *strength* coming into play in the projected experiments. Here the "Whitworth metal," which is enormously strong, has, no doubt, been taken into consideration.

I have, &c.

Robin Allen, Esq. (signed) *John Tyndall.*

Enclosure 5, in No. 14.

Royal Gun Factories, 18 November 1874.

WITH reference to previous correspondence on the subject of fog-signal guns, I beg to inform you that we are now prepared to carry out experiments to ascertain the material and form of mouth best adapted for the propulsion of sound.

Should any of the Elder Brethren, or their scientific advisers, be able to attend, it will give us much pleasure if they will name an early day for the purpose. In the event of no particular day being preferred for the experiment, on Thursday, 26th instant, at 11 a.m., at the Proof Butt, Woolwich Arsenal, will be the time and place selected.

A programme of the experiments is forwarded herewith, and any remarks, or suggestions, for subsequent trials will be gladly received.

(signed) *F. A. Campbell,*

Secretary, Trinity Board. Superintendent.

PROGRAMME.

First Experiment.

The four cylinders—

a. Bronze, with parabolic mouth.
b. Cast iron „ „
c. Cast iron, conical mouth.
d. Cast iron, no mouth.

will be placed in a row on the top of the Proof Butt, pointing S.S.W. The series will be fired at intervals of five minutes, with ten seconds between each discharge.

The order in which they will be fixed will be known to the proof master alone, who will vary it at his discretion, and who will superintend the loading and firing.

The observers will be stationed at 100 yards in front of the cylinders for the first discharge, and will move 100 yards farther in a S.S.W. direction, during each inverval, till the sound becomes inaudible.

They will estimate the intensity of the reports, and, putting that of the first gun of each series as five, will denote the subsequent reports by such numbers as appear to them to represent the relative loudness. Their notes will be compared after the termination of the experiment.

Second Experiment.

The cylinder will be turned aside through an angle of 30 degrees, and fired and noted as before, the object being to ascertain the comparative dispersion due to the several varieties of piece.

Third Experiment.

Will be the same as the second, except that the angle will be 45 degrees.

(signed) *F. A. Cambell,* Colonel R. A.,

18 November 1874. Superintendent, Royal Gun Factories.

[The above Programme of Experiments were duly carried out, Dr. Tyndall and several of the Elder Brethren taking part in the observations made.]

Enclosure 6, in No. 14.

Surveyor General's Department, War Office,
11 December 1874.

Sir,

Adverting to your letter of the 6th October last, and to that from this office of the 29th idem, relative to preliminary trials being made with cylinders for fog-signal gun, I am directed by the Surveyor General of the Ordnance to transmit, for the information of the Trinity Board, the enclosed report from Colonel Campbell upon the experiments above referred to; and I am to state that, anticipating the concurrence of the Elder Brethren, instructions have been given for the manufacture of two more cylinders and a reflector, at an estimated cost of about 7 *l.*, as recommended in the report.

I am, &c.
(signed) *John Adye*,
Brigadier General, Director of Artillery.

The Secretary, Trinity House.

Report of Preliminary Experiments with Fog-Signal Cylinders.

The four cylinders, mentioned in a previous report on this subject and sketched in the margin, were placed for trial in a row on the top of the proof-butt, Royal Arsenal, pointing S.S.W. The trial was arranged to take place on the 26th November, and a committee of the Elder Brethren of the Trinity Board, accompanied by Professor Tyndall and Mr. Douglass, attended and assisted as observers during the experiments. The first test was carried out as follows: The series of four guns were fired at intervals of five minutes, ten seconds being allowed between each discharge. The order in which the guns were fired was known to the proof-master alone, who varied it at his discretion, and who superintended the loading and firing.

The observers were stationed at 100 yards in front of the cylinders for the first series, and moved farther off in a S.S.W. direction during each interval of five minutes. The actual distances at which the observations were taken were—

100 yards.	600 yards.	1,700 yards.
200 „	800 „	2,000 „
300 „	1,000 „	2,300 „
400 „	1,200 „	2,600 „
500 „	1,400 „	3,000 „

Eight observers estimated the intensity of the reports at every distance, and putting that of the first gun of each series at 5, denoted the subsequent reports by such numbers as appeared to them to represent the relative loudness.

The weather was cold and fairly clear, and the air was considerably diacoustic, while a smart breeze of a slightly gusty character, but averaging a strength of 3 on the scale, blew from E.S.E.

The cylinders were loaded with 4 oz. of powder and half-inch wad, all the cartridges being precisely similar. Owing to the smallness of the charges, the wind, the local noises, and the immense difficulty of actually comparing sounds of identical character, no great accordance could be expected between the records of the observers for particular series, and trustworthy results could be hoped for only from a careful analysis of the averages obtained.

The second experiment was similar in character to the first, but instead of noting the comparative loudness of the reports from constantly-increasing distances, the observers, six in number, stationed themselves in various contiguous positions about two miles to the S.S.W. of the proof-butt; standing then on the first slope of Shooter's Hill, they could distinctly see the flashes and hear the reports.

A charge consisting of 10 oz. of gun cotton (8 oz. wet and 2 oz. dry) was detonated, unconfined, after each series for comparison.

In addition to the observers mentioned, several other gentlemen were present and took notes for a portion of the time; the general tenour of their results coincided with that of the average ultimately obtained, but it has been thought desirable to exclude partial records as tending to obscure the certainty of the method pursued.

Result of the First Experiment.

On adding up the numbers assigned to the reports by the eight continuous observers, at varying ranges, it was found that the orders of merit were thus awarded:—

No. 1.—Cast-iron, plain.

4th, 3rd, 2nd, 4th, 4th, {3rd, 4th,} 2nd, 4th; giving a total of 26½.

No. 2.—*Cast-iron, cone.*

1st, 1st, 1st, 1st, 1st, 1st, 3rd, 1st; giving a total of 10.

No. 3.—*Bronze, parabola.*

2nd, 4th, 3rd, 3rd, 3rd, {3rd, 4th,} 1st, 2nd; giving a total of 22½.

No. 4.—*Cast-iron, parabola.*

3rd, 2nd, 4th, 2nd, 2nd, 2nd, 4th, 2nd; giving a total of 21.

Now these numbers, 10, 21, 22½, and 26½, though not in any way representing the relative loudness of the reports, yet represent the *order* of loudness, and the *certainty* of observation. The cast-iron cone thus takes its stand as incontestably the best, while the plain muzzle-gun is clearly the worst; the question of the metals, as decided by the two parabolic mouths, appeared to be doubtful at this stage, though the cast-iron had a slight advantage.

Result of the Second Experiment.

Adopting the same method of analysing the results, it was found that the six continuous observers placed the guns thus:—

No. 1.—*Cast-iron, plain.*

4th, 4th, 3rd, 4th, 4th, {3rd, 4th,} giving a total of 22½.

No. 2.—*Cast-iron, cone.*

1st, 1st, 1st, 1st, 1st, 1st; giving a total of 6.

No. 3.—*Bronze, parabola.*

3rd, {2nd, 3rd,} 4th, 3rd, 3rd, {3rd, 4th,} giving a total of 19.

No. 4.—*Cast-iron, parabola.*

2nd, {2nd, 3rd,} 2nd, 2nd, 2nd, 2nd; giving a total of 12½.

Again, the cone maintains a clear superiority, and the same general order preserved, confirming the result of the first experiment in a remarkable manner. It is, however, observable that the bronze parabola has lost in comparison with the cast-iron guns, and has descended nearly to the level of the plain-mouthed cylinder.

This circumstance leads at once to the consideration that increase of distance is unfavourable to bronze, and accordingly summing up the estimates of the first experiment to 1,000 yards only, the following result appears:—1st, cone; 2nd, bronze, parabola; 3rd, plain-mouth; 4th, cast-iron, parabola.

Now, since the cylinders were placed on the top of the butt, and fixed horizontally, the observers at the shorter ranges were below the axes; the plain mouth of No. 1 spreads the sound all around, the cone of No. 2 confines it to a smaller dispersion, while the action of the parabolic mouths is to send it straight forward.

Comparing these considerations with the results obtained, it appears probable, although more extended experiments are required in confirmation, that the sonorous qualities of bronze are greatly superior to those of cast-iron at short distances, but that the advantage lies with the baser metal at long ranges. This result agrees remarkably with the surmise of Professor Tyndall in his previous remarks.

Owing to the sound being most strongly propelled by the parabola over the heads of the observers at short distances, the cast-iron parabola proved the least effective under these circumstances, but rose to the second place at the longer distances. The cast-iron plain muzzle was beaten, however, by the bronze parabola, in spite of its shape, at the short ranges, owing to the ringing qualities of the metal; while, at ranges where bronze ceased to be superior to cast-iron, the parabolic shape still gave it advantage. It, nevertheless, appears probable from the experiments that, had the range been much further extended, the cast-iron plain mouth would have beaten the bronze, notwithstanding the more advantageous shape of the latter.

I am unable to offer any satisfactory reason why bronze should give a less far-reaching report than cast-iron.

On a review of the foregoing results, I am led to conclude that the conical mouth should be narrowed as far as the shock of the powder will permit, and also that the parabola

should be equal in length of axis and diameter of mouth to the cones, to afford a fair comparison, as the limit for practical purposes would be ease of manipulation, which will depend chiefly on these dimensions.

I therefore propose to experiment with the present plain-mouthed cylinder of cast-iron with the cone now existing, with a new cone to be longer and broader at the base, and with a new parabola to match. The two new cylinders will cost the same as the old ones, both being made of cast-iron.

With regard to the gun-cotton charges fired for comparison with the powder, the former were in every case distinctly the loudest, though fired quite unconfined. As far as amounts go, the two cannot be well compared, 10 oz. of gun-cotton being fired against 4 oz. of powder; but many and important advantages would be obtained by the use of gun-cotton, if found practicable and economical.

1st. The sound is equal in every direction, instead of being propelled chiefly on one side as by a gun.

2nd. No gun is required, and therefore no loading.

3rd. The flash is probably greater.

There may be some disadvantages to counterbalance, such as expense, labour to the gunner in going backwards and forwards, and adjusting the fuzes, and the highly destructive effect of charges large enough to produce sound equal to that of 3 lb. powder fired from a gun of the best description; this charge being that laid down by the Trinity Board.

Since, however, it is easy to place a charge of gun-cotton in the focus of a parabola, I would recommend that one be made for trial, together with the variously shaped cylinders for powder, and if approved, I shall be glad to consult Mr. Abel on the subject. The cost will be trifling. The amounts of gun-cotton to be detonated, both free and in front of a parabolic reflector, should be regulated by the cost as compared with that of the powder charges.

(signed) *F. A. Campbell*, Colonel, R.A.,
Superintendent, Royal Gun Factories.

30 November 1874.

Enclosure 7, in No. 14.

Trinity House, London, 16 December 1874.

Sir,

I AM directed to acknowledge receipt of a letter from General Sir J. Adye, dated 11th instant, enclosing a report from Colonel Campbell, of the Royal Gun Factories, upon some recent experiments which he has been good enough to have made with cylinders, &c., for the purpose of fog-signalling as an aid to navigation, and stating that instructions have been given for the manufacture of further instruments for a like purpose; and in reply I am to convey the cordial thanks of the Elder Brethren of this Corporation for the very interesting report, and for the extremely polite and exhaustive way in which their desire to determine the value of fog signals from explosives has been met, and to state that they fully concur in, and are obliged by, the directions given for further trials with somewhat varied instruments.

I am, &c.
(signed) *Robin Allen.*

The Under Secretary of State for War,
War Office, S.W.

Enclosure 8, in No. 14.

Royal Institution, 24 December 1874.

Sir,

I HAVE read with interest the lucid report of Colonel Campbell on the recent experiments with gun-cylinders at Woolwich.

The "order of merit" comes out in a very satisfactory manner; but I would emphasise the statement that the figures recorded indicate the *order* only, and give no notion of comparative intensity. It is to the credit of the observers that differences so slight should be so clearly detected.

The difficulty referred to by Colonel Campbell as to the superiority of the range of cast-iron over that of bronze will, in all probability, be resolved in subsequent experiments. Further experience, indeed, is needed to place the *fact* beyond question; and, prior to the establishment of the fact, attempts at explanation would be premature.

I entirely concur in the proposal of Colonel Campbell as regards future experiments with the guns, and find particular pleasure in observing that he is determined to develope to the uttermost the capabilities of gun-cotton. Here the experiments in free air, and in association with a reflector, cannot fail to be of interest.

I have, &c.
(signed) *John Tyndall.*

Robin Allen, Esq.

Sir, Royal Institution, 25 December, 1874.

WOULD you permit me to supplement my remarks on the Report of Colonel Campbell by the suggestion that an 18-pounder gun (as employed at the Trinity House) and 3 lbs. of powder be fired, and that the equivalent quantity of gun-cotton be determined?

In this way we shall arrive most directly and practically at the comparative cost and efficiency of the two substances.

Yours, &c.

Robin Allen, Esq. (signed) *John Tyndall.*

Enclosure 9, in No. 14.

Trinity House, London, E.C.,

Sir, 31 December 1874.

ADVERTING to the letter from the War Office, dated 14th instant, enclosing a report from Colonel Campbell upon the recent experiments at Woolwich for the purpose of fog-signalling, I am directed to transmit herewith copy of some observations thereon by Dr. Tyndall, to whom the report was referred, and to state that the Elder Brethren will be obliged if Colonel Campbell will embody in the further experiments proposed a comparative trial of an 18-pounder gun and gun-cotton, as suggested by Dr. Tyndall.

I am, &c.

The Under Secretary of State for War, (signed) *Robin Allen.*
War Office.

Enclosure 10, in No. 14.

Sir, War Office, 9 January 1875.

I AM directed by the Surveyor General of the Ordnance to acknowledge the receipt of your letter of the 31st ultimo, in which it is requested that a comparative trial of gunpowder and gun-cotton in an 18-pounder as proposed by Dr. Tyndall, may be carried out; and in reply I am to transmit, for the consideration of the Elder Brethren of the Trinity House, the enclosed copy of a minute by Colonel Campbell, the Superintendent of the Royal Gun Factories, on the subject.

I am, &c.

(signed) *John Adye,*

The Secretary, Trinity House, E.C. Brigadier General, Director of Artillery.

[*Copy.*]

Director of Artillery,

WE have already arranged with Mr. Abel to detonate charges of 1 lb. and 1½ lb. gun-cotton, in comparison with 3 lbs. of powder fired from a cast-iron 24-pounder howitzer of 16 cwt. If thought desirable, the same charge can also be fired from an 18-pounder gun; but the report made by Dr. Tyndall on the South Foreland experiments shows clearly that the dimensions of the 18-pounder gun are not so effective in sound-producing as those of the 24-pounder howitzer, which, indeed, do not differ greatly from those theoretically laid down in my first Report on the subject.

I should be glad to know if, under these circumstances, the Elder Brethren would wish the 18-pounder gun to be experimented upon, in addition to the howitzer.

(signed) *F. A. Campbell,* Colonel R.A.,

5 January 1875. Superintendent Royal Gun Factories.

Enclosure 11, in No. 14.

Trinity House, London, E.C.,

Sir, 15 January 1875.

I AM directed to acknowledge the receipt of Sir John Adye's letter, dated 9th instant, enclosing copy of a minute by Colonel Campbell further relative to the proposed comparative trial of gunpowder and gun-cotton for the purpose of fog-signalling, and in reply thereto I am to state that the Elder Brethren will be glad if trial can be made both with the howitzer and the 18-pounder gun; but that if the two instruments are not available they would prefer the experiment being made with the former.

I am, &c.

The Under Secretary of State for War, (signed) *Robin Allen.*
War Office.

Enclosure 12, in No. 14.

Sir, 9 March 1875.

With reference to previous correspondence, I am directed by the Surveyor Ceneral of the Ordnance to forward herewith, for the information of the Elder Brethren of the Trinity House, the enclosed Report from Colonel Campbell, C.B., Superintendent of the Royal Gun Factories, upon the further trials of the fog-signals, which were carried out on the 22nd ultimo; and I am to state that, anticipating the concurrence of the Elder Brethren, authority has been given to repeat the third experiment, as proposed.

I am, &c.
(signed) *John Adye*,
Brigadier General, Director of Artillery.

The Secretary, Trinity House, E.C.

Report on Continuation of Fog-Signal Experiments.

The further trials of fog-signals, alluded to in previous correspondence, were carried out on the 22nd February 1875, at the Proof Butt, Woolwich Arsenal. They consisted of three experiments, which may be thus described:—

First Experiment.

The second producers were six in number, viz.—

No. 1.—Cast-iron gun, plain muzzle, used in former trials.

No. 2.—Cast-iron gun, large conical muzzle, new.

No. 3.—Cast-iron gun, small conical muzzle, used in former trials.

No. 4.—Cast-iron gun, large parabolic muzzle, new, having axis and mouth equal to those of No. 2.

No. 5.—Gun-cotton detonated in focus of parabolic reflector.

No. 6.—Gun-cotton detonated in the open.

The photographs attached show the arrangement on the top of the Proof Butt. The guns were loaded with 4 oz. of fine-grained powder, and a half-inch papier-maché wad. The charges of gun-cotton were also 4 oz., and were dry.

Each series, therefore, consisted of six reports, which were fired at intervals of five seconds, the whole series thus occupying 25 seconds. An interval of five minutes was allowed from the commencement of one series to the commencement of the next. The charges of gun-cotton were detonated under the superintendence of Professor Abel's assistant, Mr. E. O. Brown, and great regularity was obtained all through, by the Proof Master of the Royal Gun Factories, who timed the firing, and who arranged the varying order of discharge, which was unknown to the hearing party, who thus were subject to no bias.

In the first experiment, this party started at 100 yards in front of the guns, increasing their distance up to 4,400 yards, and taking 16 observations. The party consisted of 11 gentlemen who noted each report independently, on the plan explained in my description of the previous experiments (30 November 1874).

Second Experiment.

This was similar to the first, in general arrangement, but the observers, now 12 in number, stationed themselves at a range of about 5,000 yards during the whole trial, which consisted of 12 series, the same sound-producers being employed as before.

Third Experiment.

It was next thought desirable to carry out a trial with charges corcesponding with those actually used by the Trinity Board in their gun-signals round the coast, and for this purpose three service guns were fired in comparison with charges of dry gun-cotton detonated in the open.

Five series were fired with the same intervals as in Experiments 1 and 2. Each series consisted of five sound-producers:—

No. 1.—A 12-pounder bronze howitzer.

No. 2.—A 24-pounder cast-iron howitzer.

No. 3.—The 18-pounder gun used at the South Foreland.

No. 4.—1½ lb. gun-cotton in the open.

No. 5.—1 lb. gun-cotton in the open.

The

The Superintendent of the Powder and Gun-cotton Factory at Waltham, estimates that the cost of gun-cotton is, weight for weight, three times that of powder, and therefore 1 lb. of this material may fairly be considered as the quantity to be fitted against 3 lb. of powder. A charge of 1½ lb. was also used to ascertain the effect of an increase, in case gun-cotton should appear to offer any important advantage, or should its manufacture be cheapened.

In this experiment, the observers, 12 in number, stationed themselves at distances varying from 5,000 to 6,000 yards, and found that the reports yielded were by means as much louder than those of the small charges, as had been expected.

Results.

The day was bright, and a cold wind blew, with fair steadiness, from the E.N.E. As the guns pointed S.S.W. the wind favoured the sound, and the air was clear and diacoustic. To save repetition, I would refer to my former report for a description of the mode of tabulating the records; as this proved satisfactory then, the same plan has again been adopted; and has yielded the following results:—

Experiment 1.—(From 100 to 4,400 yards.)

No. 1. *Cast-iron, plain Gun.*

6th, 5th, 5th, 6th, 6th, 6th, 6th, 6th, 6th, 6th, 6th.—Total, 64. Mean, 5·82.

No. 2. *Cast-iron, large Cone.*

3rd, 4th, 4/5th, 3rd, 5th, 3rd, 3rd, 4/5th, 3rd, 4/5th.—Total, 41¼. Mean, 3·71.

No. 3. *Cast-iron, small Cone.*

4th, 6th, 3rd, 3rd, 4th, 4th, 4/5th, 4th, 4/5th, 4th, 3rd.—Total, 44. Mean, 4·00.

No. 4. *Cast-iron, parabolic Mouth.*

5th, 3rd, 6th, 4/5th, 5th, 3rd, 4/5th, 5th, 3rd, 5th, 4/5th.—Total, 48¼. Mean, 4·41.

No. 5. *Gun-cotton, in Focus of Reflector.*

1st, 1st, 1st, 1st, 1st, 1st, 1st. 1st, 1st, 1st, 1st.—Total, 11. Mean, 1·00.

No. 6. *Gun-cotton, in open.*

2nd, 2nd, 2nd, 2nd, 2nd, 2nd, 2nd, 2nd, 2nd, 2nd, 2nd.—Total, 22. Mean, 2·00.

The gun-cotton in a parabolic reflector exhibits an unmistakeable superiority, while the gun-cotton unconfined is clearly the next best.

Of the guns, all the specially constructed mouths beat the plain muzzle, and the large cone is slightly superior to the small cone, which is a little better than the parabolic.

Second Experiment. (5,000 yards.)

No. 1. *Cast-iron, plain Gun.*

6th, 6th, 6th, 6th, 5/6th, 4th, 5th, 4th, 3rd, 5th, 4/5th, 5th.—Total, 60. Mean, 5·00.

No. 2. *Cast-iron, large Cone.*

5th, 5th, 4th, 4/5th, 5/6th, 6th, 6th, 6th, 6th, 6th, 6th, 6th. Total, 66. Mean, 5·50.

No. 3. *Cast-iron, small Cone.*

3-4th, 4th, 5th, 4/5th, 3/4th, 5th, 4th, 5th, 5th, 5th, 4/5th, 4th.—Total, 52. Mean, 4·33.

No. 4. *Cast-iron, parabola Mouth.*

3-4th, 3rd, 3rd, 3rd, 3-4th, 3rd, 3rd, 3rd, 4th, 3rd, 3rd, 3rd.—Total, 38. Mean, 3·17.

No. 5. *Gun-cotton before Reflector.*

1st, 1st, 1st, 1st, 1st, 1st, 1st, 1st, 1st, 1st, 1st, 1st.—Total, 12. Mean, 1·00.

No. 6. *Gun-cotton in open.*

2nd, 2nd, 2nd, 2nd, 2nd, 2nd, 2nd, 2nd, 2nd, 2nd, 2nd, 2nd.—Total, 24. Mean, 2·00.

The gun-cotton charges confirm the previous result, but the order of the guns has now been changed. The parabola has risen to the first place, the small cone comes second, but after a considerable interval, while the plain gun and the large cone bring up the rear, the latter being rather the worst.

Returning to the first experiment, and dividing it into two parts, *i.e.*, from 100 to 1,600 yards,

yards, and from 1,900 to 4,400, each part embracing eight series, we find that the result of the first part is—

	Total.	Mean.
No. 1.—Plain gun	53	4·82
No. 2.—Large cone	47	4·27
No. 3.—Small cone	40	3·64
No. 4.—Parabola	58	5·27
No. 5.—Gun-cotton in reflector	11	1·00
No. 6.—Gun-cotton in open	22	2·00
The result of the second part is—		
No. 1.—Plain gun	61	5·55
No. 2.—Large cone	44	4·00
No. 3.—Small cone	53·5	4·86
No. 4.—Parabola	39·5	3·59
No. 5.—Gun-cotton in reflector	11	1·00
No. 6—Gun-cotton in open	22	2·00

Thus it appears that at all ranges, No. 5 is the best, and No. 6 next best, and I think it may now be assumed as a fact, that when equal weights are employed, gun-cotton yields a louder report than gunpowder, while the addition of the reflector gives a clear superiority.

The guns afford some curious information. At the short ranges near the butt, where the axes of the guns point over the observers, the parabola is beaten by all, even the plain gun, because a great proportion of the sound is propelled nearly straight forwards, spreading out, no doubt, as the distance increases, till, at the long ranges, the power thus husbanded begins to tell, and gives the parabola an easy victory. The two cones are, on the whole, nearly equal, and their variations are probably due to the natural errors of the experiment.

The following table will show more clearly the mode in which distance affects the guns. The gun-cotton charges are omitted :—

	Yards, 100 to 1,600.	Yards, 1,900 to 4,400.	Yards, 5,000.
No. 1.—Plain gun	2·73	3·55	3·00
No. 2.—Large cone	2·28	2·00	3·50
No. 3.—Small cone	1·64	2·86	2·33
No. 4.—Parabola	3·28	1·59	1·17

The small cone opens at an angle of 60°, the large one at 45°; the axis of the small cone is 6·747 inches, that of the large one 12·071 inches, measured from the muzzle.

It will be remembered that, in the former experiments in November 1874, the small cone now employed beat the very open parabola then used, while now the improved parabola beats both the cones, which give nearly equal results. Both new and old parabolas have mouths of equal diameter.

When first a new kind of fog-signal gun was submitted by this department, it was argued that the expanding gas would strike with sudden force on the external air at a point a short distance in front of the muzzle. It would now appear from the above results that this "centre of percussion" must be far inside the small cone, since no advantage is gained by prolonging the sides. The focus of the open parabola used in the November experiment was 2·5 inches in front of the muzzle. The focus of the parabola which has now proved successful is ·8 of an inch in front of the muzzle; this indicates also that the centre of percussion is not far from the latter distance. It probably lies about one inch outside the bore, and will no doubt vary approximately with the calibre of the gun, if the charges fired be of proportional dimensions; in this case a more general form of expression may be adopted, and we may say that the centre of percussion lies about half a calibre in front of the muzzle.

If, then, this point is taken as the focus, it will be easy to construct a parabola which shall give the best results attainable; size, weight, and expense being the limiting elements.

Third Experiment.

It was anticipated that the greatly increased charges employed in the third trial would yield much louder reports, and therefore the range was increased to 6,000 yards; to obtain this range it was found necessary to descend into somewhat lower ground, and thus a sound

sound-shadow was produced, which may have exercised an injurious effect on the accuracy of the transmission of the vibrations. After two series it was found that the sound was not nearly so loud as had been expected, and the party gradually returned to the 5,000 yards range, and on the whole the following results were obtained.

No. 1.—12-*Pounder Bronze Howitzer—3lbs. Powder.*

1st, 4th, 2/3rd, 5th, 3/4th, 3rd, 1/2nd, 2nd, 5th, 4th, 4th, 5th.—Total 43½. Mean, 3·62.

No. 2.—24-*Pounder Cast-iron Howitzer—3 lbs. Powder.*

4/5th, 3rd, 1st, 2/3rd, 1st, 1st, 1st, 1/2nd, 2nd, 1st, 1st, 2nd.—Total, 21½. Mean, 1·79.

No. 3.—18-*Pounder Cast-iron Gun—3 lbs. Powder.*

4/5th, 5th, 5th, 4th, 3/4th, 5th, 4th, 3/4th, 4th, 4th, 5th, 3/4th.—Total, 51. Mean, 4·25.

No. 4.—1½ *lb. Gun-cotton in open.*

3rd, 2nd, 4th, 1st, 5th, 2nd, 2nd, 5th, 1st, 2nd, 2/3, 1st.—Total, 29½ Mean, 2·46.

No. 5.—1 *lb. Gun-cotton in open.*

2nd, 1st, 2/2rd, 1/3rd, 3/4th, 3/4th, 5th, 3/4th, 3rd, 4th, 2/3rd, 3/4th.—Total, 36½. Mean, 3·04.

As far as this experiment can be relied on, the cast-iron howitzer is the best of all; the large and small charges of gun-cotton followed in order, and the bronze howitzer beats the 18-pounder cast-iron gun, which brings up the rear.

It may now be remarked that the two qualities which determine the efficiency of a plain-muzzled gun as a sound-producer are material and shape. The preliminary experiments in November 1874, showed pretty clearly that bronze was less effective than cast-iron, a somewhat unexpected result; for though Professor Tyndall had surmised that the superiority of sound due to the ringing quality of bronze would disappear at long ranges, yet I believe no one had anticipated that the report of a gun made of this metal would be actually inferior to that yielded by a cast-iron piece of the same dimensions. I would offer as a probable explanation of this circumstance the hypothesis that the vibrations due to the discharge are more readily taken up by the bronze than by the cast-iron, and thus less work is done directly on the air, which is the true propagator of the report.

In my first communication on the manufacture of a fog-signal gun, I mentioned certain facts connected with the burning-up of powder charges which led me to the view that the greatest report would be obtained (with 3lb. of powder) in a bore of inches in diameter, and about 5 or 6 calibres in length; those conditions are very nearly fulfilled in the cast-iron howitzer, which, therefore, appears to have the advantage both in material and shape. The bronze howitzer does not depart greatly from the shape thus arrived at, but has the inferior metal. The 18-pounder gun has the better metal, but departs considerably from the theoretical shape. The experiment tends to show, then, that shape is of more importance than material.

With regard to the gun-cotton charges, the larger is naturally better than the smaller, but the difference between them appears to be rather less than the difference between the larger and the iron howitzer. The number of series fired was, however, too small to permit any certainty on this point. The gun-cotton would be improved by the addition of a reflector, and the howitzer would be improved by that of a parabolic mouth.

Recapitulation.

The general results may be briefly summarized as follows:—Charges of gun-cotton yield louder reports at all ranges than charges of powder of equal weights, however fired.

The addition of a parabolic reflector gives a decided increase to the power of gun-cotton. Charges of gun-cotton yield reports nearly equal with those of gunpowder, when quantities of equal price are employed—*i.e.*, a change in the shape of the gun will be sufficient to give the powder the advantage or disadvantage.

As regards the proportions of the gun, the length of the cartridge should be equal to its diameter, and that of the bore of the piece should be from 5 to 6 diameters. The muzzle should be a parabola whose focus is half a calibre in front of the muzzle ($y^2=2\,c\,x$, where C calibre), and no doubt the farther the parabola is carried forward the less will be the loss of sound.

Before taking any steps towards manufacture, I would recommend that I be authorised to repeat the 3rd experiment on a somewhat more extended scale. The results are so important, and the cost will be so small, being merely that of ammunition, that I think it most desirable to fire at least 12 series, using the heavier guns and the larger charges of gun-cotton. It would be best, I think, when the charges are ready, for me to select a day when but little wind is blowing, and when the weather is of the kind known as "muggy."

I would telegraph to the Elder Brethren of the Trinity Board, and to Dr. Tyndall, but I fear it would be impossible to arrange beforehand for them to be present, if a specially suitable day is to be selected.

(signed) *F. A. Campbell*, Colonel., R.A.,
Superintendent, Royal Gun Factories.

2 March 1875.

[A copy of Colonel Campbell's Report was sent to Dr. Tyndall.]

Enclosure 13, in No. 14.

Sir, Royal Institution, 23 March 1875.

I HAVE read with great pleasure the instructive report of Colonel Campbell on the recent experiments on sound, executed at Woolwich.

With the recommendations contained in the report, I beg to express my entire concurrence.

The proved inferiority of the 18-pounder, and the clear advantage gained with the parabolic muzzle, are practical results of obvious importance.

I am of opinion that the elder brethren will act wisely in keeping their attention fixed on gun-cotton. Even the four-ounce charge, on many of the Brethren's lightships, would furnish, in foggy weather, a signal of extreme value to the mariner. The great handiness of gun-cotton is also a recommendation.

In the present state of the question, I should hardly venture an hypothesis to explain the apparent difference between bronze and cast-iron. Colonel Campbell refers to "a true cause," as far as it goes; but I am not certain that further experiments with other guns would not abolish the observed difference. "Shape," to use the words of Colonel Campbell, "is of more importance than material."

I have, &c.

Robin Allen, Esq. (signed) *John Tyndall.*

Enclosure 14, in No. 14.

Sir, 18 May 1875.

REFERRING to previous correspondence on the subject of experiments with fog-signal guns, I am directed by the Surveyor General of the Ordnance to transmit, for the consideration of the Elder Brethren of the Trinity House, the enclosed report upon trials carried out on the 2nd instant.

I am, &c.

(signed) *John Adye,*

The Secretary, Trinity House, E.C. Brigadier General, Director of Artillery.

REPORT ON CONTINUATION OF FOG-SIGNAL EXPERIMENTS.

On the 2nd May, the repetition, on a more extended scale, of the third experiment described in my report of 2nd March last, was carried out. The day was warm and bright, rain had fallen previously, and the air was moist; the wind was due south—a gentle breeze of fair steadiness—and nearly dead against the sound, the guns being N.N.E. of the observers, who, eight in number, stationed themselves on the top of the waterworks, on the side of Shooter's Hill, a distance of two and a half miles, measured on the map.

The weather presented a marked contrast with that experienced at former trials, when a keen dry N.E. wind blew in gusts nearly down in the line from the guns to the observers. The position adopted was free from local noises, and owing to this cause, and to the favourable nature of the day, the concord between the observers was much greater than on previous occasions.

Eighteen series were fired, of which one was vitiated by a mistake, leaving seventeen observations independently made, under most advantageous conditions, by eight observers. The results, therefore, of this experiment are entitled to much weight.

It will be remembered that the circumstances attending the first trial of heavy charges were unfavourable. Five series only were fired; local noises and gusts of wind interfered, and the results were considered doubtful. Where, therefore, they do not accord with those now obtained, the latter should be accepted.

Working out the figures of merit on the plan previously adopted, they are as follows:—

No. 1.—Bronze 12-pounder howitzer, 3 lb. L.G. gunpowder	1·25
No. 3.—Cast-iron 24-pounder howitzer, 3 lb. gunpowder	2·31
No. 3.—Cast-iron 18-pounder gun, 3 lb. gunpowder	2·69
No. 4.—Gun-cotton in open 1 lb.	4·25
No. 5.—Gun-cotton in open 1½ lb.	4·5

Thus it appears that all three guns beat the gun-cotton charges easily; that both the howitzers beat the 18-pounder gun; that the bronze howitzer beat the cast-iron one; and that the gun-cotton charges were practically equal, whether of one or one and a half pound weight.

The superiority evinced by the guns firing powder charges equal in price to the gun-cotton, is marked, and it was noticed during the experiment that more difference existed between

between the reports than had been observed in former trials. This may perhaps be partly due to the circumstance of the wind being against instead of with the sounds. The action of the gun is to drive a mass of vibrating air forwards in a definite direction, while the shock of the gun-cotton is exceeding local, as has been shown by Professor Abel in many experiments.

The gun may therefore be better able than gun-cotton to make itself heard against the wind. The advantage gained by the bronze howitzer over the cast iron one is probably due to the size of the bore—the cast-iron 24-pounder is rather too large for 3 lb., the bronze 12-pounder is rather too small, an excess in size may be more injurious than defect.*

Both howitzers again beat the long gun, and confirmation is obtained of the previously formed deduction that shape is of more importance than material.

The equality of the charges of gun-cotton is remarkable, and should, I think, be further tested: I shall include a recommendation on this point at the end of my report.

It has been proposed to use as sound-producers for the Arctic Expedition small bronze mortars, fired with a tightly-fitting wood-plug jammed into the muzzle, in order to increase the sound. The question of the amount of charge to be used under these circumstances having been referred to the Royal Gun Factories, it was thought desirable to test the pieces, and advantage was taken of the circumstance to ascertain whether the sound was really increased by the plugs in preference to the wads usually employed.

Since we have hitherto proceeded on the principle that suddenness of shock was a great element of success in sound-producing, and since the interposition of an elastic column of air in the mortar, between the powder and the plug, must materially deaden this shock, it was clear that, if the plugs proved successful, our principles must be wrong, and hence the trial possessed much interest.

It was also thought desirable to fire, for comparison, the little parabolic gun which represents the types we have found most successful.

Seventeen series were therefore estimated by eight observers, the pieces being:—

A.—Cast-iron parabola, charge 4 oz. F.G. powder, papier maché wad - - - - - -	1·00 first by every one.
B.—Bronze 12-pounder mortar, wood plug in muzzle, charge 5 oz. L.G. powder (service charge) - -	2·69
C.—Bronze 12-pounder mortar, junk wad, rammed home, charge 5 oz. L. G. powder (service charge) - -	2·31

It was observed during the experiment that the difference between the loud report and the two low ones was greater than had been the case at any of the previous experiments.

Since the parabolic gun combines all the points considered advantageous, such as the best material, length, calibre, shape of mouth and wad, while the bronze mortar departs from these conditions in all respects, it is satisfactory to find that theory in this case is amply borne out by practice. With respect to the charges, the mortars fired an ounce more than the parabolic gun, but they fired L. G. powder instead of F. G.; the former is rather less rapid in ignition, but is about in proportion to the diameter of the bore, which is 2 inches in the parabolic gun, and 4⅓ inches in the mortars.

The mortar fired with the wood plug was rather less effective than the mortar fired with the junk wad.

At the outset of this inquiry, the Elder Brethren specified 3lbs. of powder as the charge to be used, or in other words limited the expense to 2*s.* per round. The experiments carried on at the South Foreland showed that, though the superiority was somewhat fluctuating, yet that, on the average, the siren beat the gun. I believe the whole question to be one of expense, and think that we are now in possession of data sufficient to warrant an extension of the methods pursued.

Probably a gun of the best form, fired with 3 lbs. of powder, will be found equal to, or slightly better than, the siren; but it is almost certain that an equally well-constructed gun, fired with charges of 6 lbs., will propel sound much further. In connection with this, the anomaly above-mentioned of the equality of the results yielded by 1 lb. and 1½ lbs. gun-cotton remains to be cleared up; and I would suggest that charges of 1 lb., 2 lbs., and 3lbs. of this material be tried. The cost of these will be two, four, and six shillings, and the equivalent of powder-charges will be 3 lbs., 6 lbs., and 9 lbs.

Unless the expense be considered too great, it would be desirable to make three cast-iron guns of the form found best suitable in size to these charges. Three reflectors should be cast for the gun-cotton, and the six should be compared at Shoeburyness.

Finishing and polishing would not be required, and the material could afterwards be melted up. An estimate of the cost is appended.

The points to be determined are:—

1st. Whether increase of charge of *powder* affords an increase of sound-production proportionate to the additional expense.

2nd.

* I have since ascertained that the junk wads used with the 24-pounder howitzer fitted scarcely so tightly as in the other guns.

2nd. Whether increase of charge of *gun-cotton* affords increase of sound proportionate to the additional expense.

3rd. Whether the explosive signal, which best combines efficiency with economy, is superior to signals given by other means.

A preliminary experiment should be carried out on a large scale, say with 6 lb. charges, to determine the comparative advantages of the F.G., the L.G., and the R.L.G., powders of the service, as this point is at present a matter of theory, and has never been experimentally settled. I propose to do this at once.

I suggest these steps as appearing to offer the best means of arriving at a well-founded decision, but shall of course be happy to aid the Elder Brethren in whatever course they may adopt.

It appears from the first communication on the subject made by the Board to the War Office*, that the fog-gun at Lundy was fired 2,065 times in 1873, during 507 hours of fog. If the rate of firing be increased from four times to 12 times an hour, as desired, the question of the cost of ammunition becomes of great moment, and will therefore probably form the limiting condition of efficiency, and I shall be glad to learn the views of the Elder Brethren on this head.

The problem originally set before us, viz., how to make the most noise every five minutes for 2 *s.* a round, is now practically solved with respect to explosives.

Gunpowder has shown that, at present prices, it is more effective than gun-cotton.

Shape and size prove to be the most important elements in the construction of a gun; while nature of material is of little consequence; and we are ready to proceed with the manufacture of a machine designed to combine all the ascertained advantages.

It now rests, therefore, with the Elder Brethren to say whether they will remain satisfied with the results obtained, or whether they will extend the problem and endeavour to obtain greater power.

F. A. Campbell, Colonel, R.A.,
Superintendent, Royal Gun Factories.

11 May 1875.

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* Trinity House, London, E.C.,
28 February 1874.

Sir,

I am directed by the Board to acknowledge the receipt of your letter of the 14th ult in relation to the proposed experiments, having for their object the use of guns as fog signals, and to express their best thanks to the War Department for the readiness with which they have undertaken to assist in the matter.

The necessary expenditure upon any experiments made by the War Department will of course be defrayed by this Board; and, with the view of obtaining an approximate estimate of what those expenses are likely to be, I am directed, in the first instance, to inform you of the conditions under which the service is required to be carried on.

The gun now in use is an 18-pounder muzzle-loading gun, fired with a charge of 3 lbs. of powder, in an ordinary flannel cartridge, and with a wad made of coir junk. Two gunners are employed, one of whom is constantly on duty; dwellings are provided for these men and their families at or near the gun-house. During fog, the gun is fired at regular intervals of fifteen minutes, it being found that the men cannot reload with sufficient rapidity to discharge at shorter intervals. This is a condition which detracts very much from the usefulness of the signal given; five minutes is the greatest interval of silence in all other sound-signals in use.

The enclosed statement will show the nature and amount of work obtained from the gun under the present system.

I am now to request that you will be so good as to inform me whether the War Department would be willing to make a design for such a gun as would meet the requirements indicated in this letter and in that of the 8th ult.; and, if so, that you will favour me with an estimate of the probable amount of expense which will be incurred in designing and manufacturing the gun.

I am, &c.,
John Inglis, Assistant Secretary.

Brigadier General Sir J. M. Adye, K.C.B.,
War Office.

FOG GUN RETURN.

Lundy, 1873.

MONTH.	Total Duration of Fog or Snow.	Average Daily Duration of Fog or Snow.	Longest Period of Duration of Fog or Snow.	Number of Times Gun Fired.	Cartridges Expended.	Tubes Expended.
	H. M.	H. M.	H. M.			
January	18.40	.36	7.	77	77	88
February	25.25	.55	10.	104	104	119
March	60.10	2.00	31.10	211	211	235
April	39.45	1.20	23.10	168	168	169
May	69.55	2.15	39.50	279	279	260
June	34.25	1.10	12.50	142	142	147
July	32.50	1.3	9.30	139	139	142
August	87.40	2.50	35.45	357	357	373
September	28.00	.56	11.10	107	107	115
October	43.10	1.23	9.35	190	190	197
November	36.20	1.12	9.30	160	160	168
December	32.35	1.3	6.50	131	131	166
TOTAL	508.55	-	-	2,065	2,065	2,179

STATEMENT of Estimated Cost of proposed Reflector and Guns for Fog-Signal Experiments:—

Article.	Cost.	Value when returned as Scrap.	Net Cost.
	£. s. d.	£. s. d.	£. s. d.
Reflector, each - - - -	41 – –	6 – –	35 – –
No. 1 Gun „ - - - -	23 – –	3 10 –	19 10 –
No. 2 „ „ - - - -	30 – –	4 15 –	25 5 –
No. 3 „ „ - - - -	46 – –	8 – –	38 – –

11 May 1875.

F. A. Campbell, Colonel, R.A.,
Superintendent of Royal Gun Factories.

— II. —

FOG SIGNALS UNDER THE JURISDICTION OF THE COMMISSIONERS OF NORTHERN LIGHTHOUSES.

— No. 15. —

Commissioners of Northern Lighthouses to Board of Trade.

(H. 4087.)

Northern Lighthouses Office, Edinburgh,
19 June 1874.

Sir,

I AM directed by the Commissioners of Northern Lighthouses to transmit, enclosed, a report by Messrs. Stevenson on a fog signal which, some time ago, they wrote to America to inquire about, together with the letter which accompanied the said report. This signal was selected by the engineers with a view to its possible adoption at St. Abb's Head, and on hearing from the Board of Trade, the Commissioners shall, if approved, make arrangements for acquiring the apparatus.

I am, &c.

The Assistant Secretary,
Harbour Department, Board of Trade.

(signed) *Alex. Cuningham*,
Secretary.

Enclosure 1, in No. 15.

St. Abb's Head Fog Signal.

WE have been corresponding with Messrs. Brown, of New York, the patentees and manufacturers of the syren fog signal and caloric engine. The syren is the apparatus recommended in the Report on Fog Signals lately communicated by the Trinity House in connection with Dr. Tyndall's experiments, and we recommend its adoption at St. Abb's Head. Messrs. Brown's offer for a first-class syren and two caloric engines is 6,900 dollars, equal to about 1,400 *l.*

We are not able to arrange the house accommodation that will be required until we receive from Messrs. Brown a plan showing the form and dimensions of the apparatus.

Edinburgh, 17 June 1874. (signed) *D. & T. Stevenson.*

Enclosure 2, in No. 15.

Gentlemen, New York, 3 June 1874.

In reply to your favour of the 12th of May we propose to furnish you:

1st. Two (2) 24-inch diam. caloric engines of Ericsson's patent, with the air chamber, air pump, automatic movement for opening and closing the blow, mounted with one of our patent second-class sirens, and trumpet, for 4,900 dollars.

2nd. Two (2) 32-inch diam. caloric engines, &c., as above, with one of our patent first-class sirens and trumpet, 6,900 dollars.

3rd. One (1) of our patent steam sirens, with steam engine, feed pump, automatic movement, and a 25-horse power locomotive boiler, mounted with all the fixtures, except smoke pipe, for 3,600 dollars.

4th. One of our second-class patent steam sirens, &c., as above, with a 15-horse power locomotive boiler, &c., for 2,900 dollars.

5. One of our first-class patent steam sirens, with boiler, but with engine-feed pump, and a drawing for putting up the same, for 2,300 dollars.

6th. One (1) of our second-class patent steam sirens, without boiler, &c., as above, for 2,000 dollars.

Boxing and shipping extra, terms, cash on presentation of bill of lading to a house in this city. Enclosing photo,

We are, &c.
(signed) *A. & F. Brown,*
by *H. Watteyne.*

Messrs. D. & T. Stevenson,
Engineers of Northern Lighthouses,
84, George-street, Edinburgh, England.

— No. 16. —

Board of Trade to Commissioners of Northern Lighthouses.

(H. 4087.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W.,
Sir, 1 July 1874.

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 19th ultimo, transmitting a report by Messrs. Stevenson relative to a fog signal apparatus which they propose should be adopted at St. Abb's Head, together with a letter from Messrs. Brown, of New York, stating their terms for the supply of the same.

I am now to point out that, if the Commissioners of Northern Lighthouses think a fog-signal is required at St. Abb's Head, it will be necessary that the usual application should be made in the terms of the Statute to the Corporation of the Trinity House.

The Board of Trade have received no notification from the Elder Brethren of their approval of the application made by the Commissioners in December 1872.

I am, &c.
(signed) *C. Cecil Trevor.*

The Secretary,
Commissioners of Northern Lighthouses.

— No. 17. —

Commissioners of Northern Lighthouses to Board of Trade.

(H. 4531.)

Northern Lighthouses Office, Edinburgh,
Sir, 9 July 1874.

I AM directed by the Commissioners of Northern Lighthouses to acknowledge receipt of your letter of 1st current, pointing out that if the Commissioners think a fog signal is required at St. Abb's Head, it will be necessary that the usual application should be made in terms of the Statute to the Corporation of the Trinity House.

From the length of time which has elapsed, and from the variety of discussions which have arisen, the precise position of matters seems to have been overlooked.

On 26th December 1872, the Commissioners, as the result of a previous correspondence with the Board of Trade, gave notice to the Corporation of the Trinity House of their intention to erect a fog signal at St. Abb's Head, and at Sanda in the Clyde, and they accordingly intimated that the application was made for the purpose of obtaining the sanction of the Elder Brethren, and that a copy of that communication had been sent to the Board of Trade.

To this communication no answer was received by the Commissioners until 13th August 1873, when the Commissioners received the letter from the Elder Brethren, copy of which is enclosed, giving the statutory consent.

I am, &c.

The Assistant Secretary, (signed) *Alex. Cuningham,*
Harbour Department, Board of Trade. Secretary.

Enclosure in No. 17.

Sir, Trinity House, London, 13 August 1873.

ADVERTING to my letter of the 2nd January last, in reply to yours of the 26th December relative to the establishment of fog signals on the coast of Scotland, also to the report of Messrs. Stevenson, dated 19th November 1872, I am n w directed to forward to you the accompanying copies of preliminary reports made by a committee of Elder Brethren and by Dr. Tyndall, upon the experiments with fog signals at South Foreland, so far as they have at present proceeded.

It will be seen by these reports that there remains still much matter for inquiry, and that other instruments besides those already under trial, have yet to be submitted to experiment before the present investigation can be satisfactorily completed.

The Elder Brethren, however, consider that the air-horn of Professor Holmes has mantained so good an effective character as to justify its being permanently classed as a coast fog signal, and adopted for service without waiting for further development.

Turning, therefore, to your letter of the 26th December 1872, wherein you request the statutory consent of this Board to the establishment of two fog signals, one on St. Abb's Head, the other on Sanda, I am directed to acquaint you that the Elder Brethren concur with the Commissioners in the proposal to place a powerful fog horn on St. Abb's Head, and hereby notify their statutory sanction thereto; but as regards the ship rock of Sanda, they are of opinion that a fog signal on that danger should form part of a general plan to be arranged between the English, Northern, and Irish Boards for the navigation of the North Channel during fog, and that it is desirable to wait the final report on experiments in progress before such an arrangement is brought under discussion.

I am, &c.

A. Cuningham, Esq. (signed) *J. Inglis.*

— No. 18. —

Board of Trade to Trinity House.

(H. 4531.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W.,
14 July 1874.

Sir,

I AM directed by the Board of Trade to acquaint you, for the information of the Corporation of Trinity House, that they have received a letter from the Commissioners of Northern Lighthouses, stating that the Corporation, on the 13th of August last, accorded their statutory sanction to the erection of a fog signal on St. Abb's Head.

The Board of Trade were not aware that this sanction had been given, and I am to request that you will move the Elder Brethren, when communicating to this department the intimation of that sanction, to sanction also in the statutory manner the distinctive signal to be given.

I am, &c.

The Secretary, Trinity House. (signed) *C. Cecil Trevor.*

— No. 19. —

Trinity House to Board of Trade.

(H. 4962.)

Trinity House, London, E.C.,
31 July 1874.

Sir,

REFERRING to your letter of the 14th instant, on the subject of a proposed fog signal at St. Abb's Head, I am directed to explain to the Board of Trade that the original suggestion of the Northern Commissioners for a fog signal thereat was made in December 1872, but that the Elder Brethren deferred giving statutory sanction thereto pending the result of the experiments at South Foreland, which were then in contemplation; by the correspondence which is now submitted, it will be seen that sanction was given to the placing of a powerful fog-horn at St. Abb's Head, on the 13th August last, and that the Elder Brethren have this day approved the character proposed in the letter from the Commissioners, dated 27th instant.

I am, &c.

The Assistant Secretary, (signed) *Robin Allen.*
Harbour Department, Board of Trade.

Enclosure 1, in No. 19.

EXTRACT of Letter from Trinity House to Northern Commissioners, dated 13 August 1873.

"TURNING, therefore, to your letter of the 26th December 1872, wherein you request the statutory consent of this Board to the establishment of two fog signals, one on St. Abb's Head, the other on Sanda, I am directed to acquaint you that the Elder Brethren concur with the Commissioners in the proposal to place a powerful fog-horn on St. Abb's Head, and hereby notify their statutory sanction thereto."

Enclosure 2, in No. 19.

St. Abb's Head Fog Signal.

ADVERTING to the letter of the Trinity House of the 24th current, regarding the fog signal at St. Abb's Head, and having reference to the fog signal proposed to be erected by the Elder Brethren at the Fern Island, we beg to propose that the fog signal at St. Abb's Head should have a blast of five seconds' duration once a minute.

Edinburgh, 27 July 1874. (signed) *D. & T. Stevenson.*

Enclosure 3, in No. 19.

Sir, Trinity House, E.C., 31 July 1874.

HAVING laid before the Board your letter dated 27th instant, stating in reply to mine of the 24th, that the Commissioners for Northern Lighthouses propose that the fog signal to be placed at St, Abb's Head should have a blast of five seconds' duration once a *minute*, I am directed in reply to acquaint you that the Elder Brethren approve, and hereby notify their statutory sanction to, the character of this fog signal being as suggested.

I am, &c.

The Secretary, Northern Lights Office, Edinburgh. (signed) *Robin Allen.*

— No. 20. —

Board of Trade to Trinity House.

(H. 4962.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W.,
12 August 1874.

Sir,

WITH reference to recent correspondence between the Corporation of Trinity House and the Commissioners of Northern Lighthouses relative to the proposed fog signal for St. Abb's Head, and especially to your letter of the 31st ult., I am directed by the Board of Trade to acquaint you, for the information of the Corporation, that they now approve of the placing of the signal in question, with the characteristic, named in your letter to the Commissioners of the 31st ultimo, viz., a blast of five seconds' duration occurring once in each minute.

The letter of the Commissioners of Northern Lighthouses is returned as requested.

I am, &c.

The Secretary, Trinity House. (signed) *Henry G. Calcraft.*

— No. 21. —

Board of Trade to Commissioners of Northern Lighthouses.

(H. 4962.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W.,
12 August 1874.

Sir,

WITH reference to your letter of the 9th ultimo, and to recent correspondence between the Commissioners of Northern Lighthouses and the Corporation of Trinity House, relative to the proposed establishment of a fog signal at St. Abb's Head, I am directed by the Board of Trade to state, for the information of the Commissioners, that the Board have this day conveyed to the Corporation their statutory approval to the placing of a fog signal in this position with the characteristic of a blast of five seconds' duration occurring once in each minute, and I am to signify the sanction of this department to an expenditure as estimated in the report accompanying your letter of the 19th June of 1,400 *l.* for the purchase of the requisite apparatus.

As regards, however, the proposed caloric engines, I am to suggest that previous to contracting for the same, it might be desirable that the Commissioners should place themselves in communication with the Corporation of Trinity House, with a view to ascertaining the results of recent trials of this engine by the Elder Brethren.

I am, &c.,

The Secretary to the Commissioners of Northern Lighthouses. (signed) *Henry G. Calcraft.*

— No. 22. —

Trinity House to Board of Trade.

(H. 5259.)

Trinity House, London, E.C.,
18 August 1874.

Sir,

I AM directed to transmit, for the information of the Board of Trade, the accompanying correspondence, which has passed between the Commissioners of Northern Lighthouses and this Corporation, respecting the proposal for a fog signal on the ship Rock of Sanda, from which it will be seen that statutory sanction has been accorded to the establishment of a syren fog signal thereat, giving a blast of seven seconds' duration once a minute.

I am, &c.
(signed) *J. Inglis.*

The Assistant Secretary,
Harbour Department, Board of Trade.

Enclosure 1, in No. 22.

Trinity House, 15 June 1874.

Sir,

ADVERTING to previous correspondence on the subject of a fog signal for the Sanda Light Establishment, the consideration of which has been deferred for the completion of the experiments with which the Elder Brethren have recently been engaged, I am now directed to acquaint you that they are prepared to sanction the establishment of a first-class fog signal at the ship of Sanda, whenever it may suit the convenience of the Northern Commissioners to move in the matter, and to state the nature and character of the instrument, and the interval of sound they would propose, observing only that it will be necessary to take the intended employment of signals on the Irish Sea Board into consideration in settling the question of distinctiveness.

I am, &c.
(signed) *Robin Allen.*

Enclosure 2, in No. 22.

SANDA FOG SIGNAL.

Northern Lighthouse Office, Edinburgh,
30 July 1874.

Dear Sir,

WE send you herewith a letter, of date 28th July, which we have just received from the Irish Lighthouse Board, from which it will be seen that they have not yet decided upon the characteristics of the proposed fog signals on the Irish coast. Under these circumstances, we propose to employ a syren, giving a blast of seven seconds once a minute.

We are, &c.
(signed) *D. & T. Stevenson.*

A. Cuningham, Esq.,
&c. &c. &c.

Enclosure 3, in No. 22.

Irish Lights Office, Westmoreland-street,
Dublin, 28 July 1874.

Gentlemen,

I HAVE to acknowledge the receipt of your letter, of the 18th instant, relative to the establishment of a fog signal on Sanda Island, off the coast of Kintyre, and in reply, beg to acquaint you that the Commissioners of Irish Lights have under their consideration the placing of fog signals at Tory Island, and South Rock, county Down, in addition to the gun on Rathlin Island for several years past, but nothing has yet been decided on as to character of the two new ones, and I have, therefore, to state that this Board would be glad to learn the exact character of the proposed signal at Sanda when decided on, in order that those to be erected by them should be so distinctive as not to be capable of mistake.

I am, &c.
(signed) *W. Lees,*
Secretary.

Messrs. D. & T. Stevenson,
84, George-street, Edinburgh.

Enclosure 4, in No. 22.

Northern Lighthouses Offices, Edinburgh,
Sir, 1 August 1874.

With reference to your letter of the 15th June last, stating that the Elder Brethren were prepared to sanction the establishment of a first-class fog signal at the ship Rock of Sanda, and adding that it would be necessary to take the intended employment of signals on the Irish seaboard into consideration in settling the question of distinctiveness, the Commissioners on receipt of the Elder Brethren's letter remitted to the engineers to correspond with the Irish Board, and I am now directed to transmit a copy of their Report, with a copy of the answer received from the Irish Board.

On considering these, the Commissioners recommend that a syren, giving a blast of seven seconds duration once a minute, should be employed, and they accordingly apply for the statutory sanction for the same.

The Commissioners presume that the Elder Brethren communicate their decisions to the Board of Trade, but there seems to have been lately some misunderstanding about this.

I am, &c.,
(signed) *Alex. Cuningham*, Secretary.

The Secretary to the Trinity House, London.

Enclosure 5, in No. 22.

Sir, Trinity House, 18 August 1874.

I am directed to acknowledge the receipt of your letter, dated 1st instant, requesting the statutory sanction of this Corporation to the establishment of a siren fog signal on the ship Rock of Sanda, giving a blast of seven seconds' duration once a minute, and, in reply, to convey statutory sanction thereto accordingly. I am, however, to add, for the information of the Commissioners of Northern Lights, that the result of the experiments at South Foreland goes to prove that with the machinery there used, a blast of any duration beyond three-and-half seconds in a siren fog signal, which is intended to be sounded every minute, can only be obtained by a proportionate loss in the intensity of the sound.

I am, &c.
The Secretary, (signed) *J. Inglis.*
Northern Lights Office, Edinburgh.

— No. 23. —

Board of Trade to Trinity House.

(H. 5259.)

Board of Trade, Harbour Department,
Sir Whitehall Gardens, S.W., 25 August 1874.

With reference to recent correspondence between the Corporation of Trinity House and the Commissioners of Northern Lighthouses, relative to the establishment of a fog signal at the ship Rock of Sanda, and especially to your letter of the 18th instant, I am directed by the Board of Trade to convey to you, for the information of the Elder Brethren, their statutory sanction to the placing a siren fog signal in this position, giving a blast of seven seconds' duration once in each minute.

The original letter of the Commissioners of Northern Lighthouses, dated the 1st instant, is returned as requested.

I am, &c.
The Secretary, Trinity House. (signed) *Henry G. Calcraft.*

— No. 24. —

Board of Trade to Commissioners of Northern Lighthouses.

(H. 5259.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W., 25 August 1874.

Sir,

With reference to recent correspondence between the Commissioners of Northern Lighthouses and the Corporation of Trinity House, relative to the establishment of a fog signal at the ship Rock of Sanda, I am directed by the Board of Trade to acquaint you, for the information of the Commissioners, that they have this day conveyed to the Elder Brethren their statutory sanction to the establishment of a siren fog signal in this position, giving a blast of seven seconds' duration once in each minute; and I am to request that an estimate of the cost may be submitted to this Department in the usual course.

I am, &c.
(signed) *Henry G. Calcraft.*

The Secretary to the
Commissioners of Northern Lighthouses.

— No. 25. —

Commissioners of Northern Lighthouses to Board of Trade.

(H. 6172.)

Northern Lighthouses Office,
Edinburgh, 12 October 1874.

Sir,

With reference to the letter from the Board of Trade to the Commissioners of Northern Lighthouses, dated 12th August last, in which the Board of Trade sanctioned the acceptance of the offers of a syren and caloric engines, by Messrs. Brown, of New York, but recommended the Commissioners to ascertain the experience of the Elder Brethren in the use of the caloric engines for fog signals, I now enclose a copy of Messrs. Stevenson's report, and have to acquaint the Board of Trade that the Commissioners have ordered a syren and caloric engine for St. Abb's Head from Messrs. Brown, as proposed.

I am, &c.
(signed) *Alex. Cuningham,*
Secretary.

The Assistant-Secretary,
Harbour Department, Board of Trade.

Enclosure in No. 25.

Report relative to St. Abb's Head Fog Signals.

On the 17th June we submitted an offer from Messrs. Brown, of New York, agreeing to furnish a syren and caloric engines for St. Abb's Head for 1,400 *l.*, which, having had personal experience of the efficient working of the caloric engine at the Cumbrae Lighthouse, on the Clyde, we recommended for acceptance. In their letter of 12th August the Board of Trade sanctioned the acceptance of this offer, but recommended the Commissioners to ascertain the experience of the Elder Brethren in the use of caloric engines for fog signals. We accordingly applied to the Elder Brethren, and having received from them very satisfactory accounts of the working of their caloric engines, we have now to recommend the Commissioners to accept the offer of Messrs. Brown.

(signed) *D. & T. Stevenson.*

Edinburgh, 8 October 1874.

— No. 26. —

Commissioners of Northern Lighthouses to Board of Trade.

(H. 6173.)

Northern Lighthouses Office, Edinburgh,
12 October 1874.

Sir,

With reference to a communication addressed to you this day regarding a syren and caloric engine for a fog signal at St. Abb's Head, I am directed to enclose a copy of a relative report by the Commissioners' engineers, requesting the sanction of the Board of Trade to an order for a similar syren and caloric engine for the fog signals contemplated at Sanda, in the Clyde, and to request the Board of Trade's sanction to such order accordingly.

I am, &c.
(signed) *Alex. Cuningham*,
Secretary.

The Assistant Secretary,
Harbour Department, Board of Trade.

Enclosure in No. 26.

Report relative to Sanda Fog Signal.

The Board of Trade, in their letter of the 12th August, having sanctioned the acceptance of Messrs. Brown's tender for the syren and caloric engines for St. Abb's Head Station, we think the Commissioners should now apply to the Board of Trade for their sanction for a similar syren and engines for Sanda, at which station a fog signal has now been sanctioned.

(signed) *D. & T. Stevenson.*

Edinburgh, 8 October 1874.

— No. 27. —

Board of Trade to Commissioners of Northern Lighthouses.

(H. 6172.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W., 16 October 1874.

Sir,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 12th instant, enclosing a report from Messrs. Stevenson relative to the favourable results of trials of the caloric engine proposed to be used with the siren fog signal, and stating that the Commissioners of Northern Lighthouses had now, as previously proposed, ordered a siren and caloric engines for St. Abb's Head.

In reply, I am now to convey to the Commissioners the statutory sanction of this Board to the above expenditure.

I am, &c.
(signed) *C. Cecil Trevor.*

The Secretary to the Commissioners of Northern Lighthouses.

— No. 28. —

Board of Trade to Commissioners of Northern Lighthouses.

(H. 6173.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W., 16 October 1874.

Sir,

With reference to your letter of the 12th instant, and its enclosure, relative to the purchase of a siren fog signal, &c., for Sanda Lighthouse Station, I am directed by the Board of Trade to acquaint you, for the information of the Commissioners of Northern Lighthouses, that they sanction the proposed purchase from Messrs. Brown of one of the above instruments, together with the necessary caloric engines.

I am, &c.
(signed) *C. Cecil Trevor.*

The Secretary to the
Commissioners of Northern Lighthouses.

— No. 29. —

Commissioners of Northern Lighthouses to Board of Trade.

(H. 6522.)

Northern Lighthouses Office, Edinburgh,
31 October 1874.

Sir,

I am directed by the Commissioners of Northern Lighthouses to transmit, for the information and approval of the Board of Trade, copy of a report by the engineers on the buildings proposed to be erected at St. Abb's Head, and on the Island of Sanda, for the fog signals authorised by the Board of Trade; also two plans of the same, which it is requested may be returned. The Board of Trade will observe that the Commissioners propose that the buildings shall be fire-proof, a course in which the Commissioners trust that the Board of Trade will concur.

I am, &c.
(signed) *Alex. Cuningham,*
Secretary.

The Assistant Secretary,
Harbour Department, Board of Trade

Enclosure in No. 29.

Report on Houses for Fog Signals, by *D. & T. Stevenson,* Engineers to the Board.

In pursuance of the resolution of the Commissioners to establish fog signals at St. Abb's Head and Sanda, we have now to report that we have examined both stations, and fixed the proper positions for the engine-houses.

A site for the St. Abb's Head engine-house, which commands the whole coast-line, can be had immediately to the west of the dwelling-houses. At Sanda the only convenient site is on the top of the ship-rock, and in close proximity to the lighthouse; both sites are on ground already belonging to the Lighthouse Board.

We are decidedly of opinion that in such isolated situations all signals sounded by steam or air engines should be contained in fire-proof buildings, and we have prepared designs for the engine-houses at St. Abb's Head and Sanda, to be composed entirely of incombustible materials.

We estimate the cost of St. Abb's Head engine-house at about 500 *l.*

The engine-house at Sanda, owing to its elevated position, and the awkward form of the rock on which it is to be placed, involves considerably more work, and our estimate for it is 630 *l.*

In both cases, however, in consequence of the small amount of work requiring to be done, and the difficulty of getting materials to the spot, our estimates cannot be regarded as similar to those for an ordinary engineering work.

The

The engines and apparatus for these fog signals having been ordered from New York, it is desirable that we should now receive authority to make arrangements for having the engine-houses erected.

The total estimates for these fog signal stations will now stand as follows:—

St. Abb's Head.

	£.	s.	d.
Price of engines at New York as ordered - - -	1,437	10	–
Packing, insurance, carriage, &c., to this country, and fitting up at St. Abb's Head, say - - - -	300	–	–
Engine-house - - - - - - - - -	500	–	–
Total - - - - - £.	2,237	10	–

Sanda.

Apparatus, &c., as above - - - - - -	1,437	10	–
Cost of carriage, &c., as above - - - - -	300	–	–
Estimate of engine-house - - - - - -	630	–	–
Total - - - - - £.	2,367	10	–

(signed) *D. & T. Stevenson.*

Edinburgh, 27 October 1874.

— No. 30. —

Board of Trade to Commissioners of Northern Lighthouses.

(H. 6522.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W., 12 November 1874.

Sir,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 31st ultimo, transmitting estimates and plans of the proposed fire-proof engine houses at St. Abb's Head and Ship Rock of Sanda, together with Messrs. Stevenson's Report on the same.

In reply, I am now to convey to the Commissioners of Northern Lighthouses the sanction of the Board to an expenditure of 500*l.* for the above purpose at St. Abb's Head, and 630*l.* at Sanda, together with the necessary charges for packing, insurance, and carriage, estimated by the engineers at 300*l.* for each station.

The plans are returned.

I am, &c.
(signed) *C. Cecil Trevor.*

The Secretary to the
Commissioners of Northern Lighthouses.

— III. —

FOG SIGNALS UNDER THE JURISDICTION OF THE COMMISSIONERS OF IRISH LIGHTS.

— No. 31. —

Board of Trade to Commissioners of Irish Lights.

(H. 2556.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W., 13 May 1873.

Sir,

I AM directed by the Board of Trade to draw the attention of the Commissioners of Irish Lights to the report of the debate in the House of Commons on Friday last, the 9th instant, upon Mr. Eastwick's motion upon the subject of lights and fog signals in St. George's Channel, and to request that the Commissioners will inquire and report to this Board whether there is space on the Tuskar Rock for the erection of the necessary building to contain a powerful fog-horn or steam-whistle to be efficiently sounded seaward.

Two of the Commissioners who happened to be in London were kind enough to attend at this office during last week, and expressed a doubt whether the rock contained sufficient space for this purpose.

I am, &c.
(signed) *C. Cecil Trevor.*

The Secretary,
Commissioners of Irish Lights.

— No. 32. —

Commissioners of Irish Lights to Board of Trade.

(H. 3486.)

Irish Lights Office, Westmoreland-street,
Dublin, 30 June 1873.

Sir,

WITH reference to your letter of the 13th ultimo, requesting to be informed whether there is space on the Tuskar Rock for the erection of the necessary building to contain a powerful fog-horn or steam-whistle to be efficiently sounded seaward, I am, in reply, to acquaint you that the Commissioners referred your letter for report to a Committee who were about proceeding to Crookhaven to meet a Committee of the Elder Brethren to confer relative to the proposal to remove that light to the Alderman Rock, and I have to enclose copy of their Report, from which the Board of Trade will perceive there would be no difficulty in erecting the necessary buildings in a suitable position on the rock, for the object contemplated.

I am, &c.
(signed) *W. Lees.*

The Assistant Secretary,
Harbour Department, Board of Trade.

Enclosure in No. 32.

Fog Signal on Tuskar Rock.

WHEN returning from Crookhaven on the 13th of June, we, the undersigned, visited Tuskar in order to report, in compliance with the request of the Board of Trade, as contained in their letter of the 13th of May, "Whether there was space on the rock for the erection of the necessary buildings for a powerful fog-horn or steam-whistle to be efficiently sounded seaward."

We examined the rock carefully, and have to report, that in our opinion there would be no difficulty in erecting the necessary buildings in a suitable position.

(signed) *Jas. A. St. Leger* (Capt. R.N.)
Thos. Bewley.
Jas. Stirling.
Leland Crosthwait.
O. P. Knott.

Irish Lights Office,
23 June 1873.

— No. 33. —

Board of Trade to Commissioners of Irish Lights.

(H. 3486.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W., 8 July 1873.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 30th ultimo, forwarding a report of a Committee stating that there would be no difficulty in erecting on the Tuskar Rock the necessary buildings in a suitable position for a powerful fog-horn or steam-whistle to be efficiently sounded seaward.

In reply, I am to observe that if the Commissioners of Irish Lights approve of a fog signal upon Tuskar Rock, they will doubtless apply in the ordinary way for the statutory sanction of the Elder Brethren of the Trinity House.

I am, &c.
(signed) *C. Cecil Trevor.*

The Secretary,
Commissioners of Irish Lights.

— No. 34. —

Trinity House to Board of Trade.

(H. 3867.)

Trinity House, London, E.C.,
23 July 1873.

Sir,

I AM directed to transmit, for the consideration of the Board of Trade, the accompanying correspondence which has passed between the Commissioners of Irish Lighthouses and this Corporation, relative to the proposed establishment of a powerful fog signal on the Tuskar Rock, by which it will be seen that the Elder Brethren have notified their statutory sanction thereto. It will be observed, also, that the question as to the character of the proposed signal is deferred pending the results of the experiments now being carried on at the South Foreland.

I am, &c.
(signed) *Robin Allen.*

The Assistant Secretary,
Harbour Department, Board of Trade.

Enclosure 1, in No. 34.

Fog Signals on Tuskar Rock.

Irish Lights Office, Westmoreland-street,
Dublin, 16 July 1873.

Sir,

The Board of Trade having called the attention of the Commissioners of Irish Lights to the Report of the Debate in the House of Commons on the 9th May last, on Mr. Eastwick's motion on the subject of lights and fog signals in St. George's Channel, and having requested the Commissioners to inform them whether there was sufficient space on the Tuskar Rock for the erection of the necessary buildings for a powerful fog signal, I am directed to acquaint you that on the 13th ultimo five members of the Inspecting Committee of this Board visited the Tuskar Lighthouse Station, and, having carefully examined the rock, expressed their opinion that there would be no difficulty in erecting the necessary buildings in a suitable position, and I am now to request you will be good enough to move the Elder Brethren to accord their statutory sanction to the placing of a powerful fog signal at this station.

The Commissioners are not prepared to recommend the adoption of any particular description of fog signals until they have been favoured with a report on the results of the experiments now being carried out by the Elder Brethren at the South Foreland.

I am, &c.
(signed) *Owen Armstrong,*
for Secretary.

The Secretary to the Trinity House,
London, E.C.

Enclosure 2, in No. 34.

Trinity House, London, 23 July 1873.

Sir,

Having laid before the Board your letter, dated the 16th instant, requesting the sanction of this Corporation to the placing of a powerful fog signal on the Tuskar Rock, I am directed to acquaint you that the Elder Brethren approve, and hereby notify their statutory sanction to the same.

I am also to state that they concur in the opinion of the Irish Commissioners, that the question of the character of the proposed fog signal should be deferred pending the results of the experiments now being carried on at the South Foreland.

I am, &c.
(signed) *R. Allen.*

The Secretary, Irish Lights Office, Dublin.

— No. 35. —

Board of Trade to Trinity House.

(H. 3867.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W., 29 July 1873.

Sir,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 23rd instant, forwarding correspondence between the Commissioners of Irish Lights and the Corporation of Trinity House relative to the establishment of a fog signal at Tuskar Rock, and intimating that the Elder Brethren have accorded their sanction to the same.

In reply, I am now to convey to you, for the information of the Corporation, the provisional statutory sanction of this Board to the placing of a fog signal at the above station, the question as to the character of the signal being left open pending the results of the experiments now going on at South Foreland.

I am, &c.
(signed) *C. Cecil Trevor.*

The Secretary, Trinity House.

— No. 36. —

Board of Trade to Commissioners of Irish Lights.

(H. 3867.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W., 29 July 1873.

Sir,

REFERRING to recent correspondence between the Corporation of Trinity House and the Commissioners of Irish Lights relative to the establishment of a fog signal on Tuskar Rock, I am directed by the Board of Trade to acquaint you, for the information of the Commissioners, that the Board have this day conveyed to the Elder Brethren their provisional statutory sanction to the placing of a fog signal at the above station, on the understanding that the question as to the character of the signal is to remain open pending the result of the experiments now going on at South Foreland.

I am, &c.
(signed) *C. Cecil Trevor.*

The Secretary, Commissioners of Irish Lights.

— No. 37. —

Commissioners of Irish Lights to Board of Trade.

(H. 6058.)

Irish Lights Office, Westmoreland Street, Dublin,
23 December 1873.

Sir,

I AM directed by the Commissioners of Irish Lights to forward herewith a communication, with its enclosures, from Mr. Wigham, requesting permission of the Board to try some further experiments at Howth Bailey station with his patent fog signal guns, and I am to request the Board of Trade will be pleased to sanction the necessary expenditure.

I am, &c.
(signed) *W. Lees.*

The Assistant Secretary, &c., &c.,
Harbour Department, Board of Trade, London.

Enclosure 1, in No. 37.

33 to 36, Capel-street, Dublin, 19 December 1873.

Sir,

I BEG to bring under your notice a matter of much interest in connection with the intense flashes produced by gas fog-signal guns. You may remember that the experiments which were recently made at Howth Bailey by Dr. Tyndall and Admiral Collinson resulted in a report that the flashes of the gas guns were brighter than those of the gunpowder guns. Dr. Tyndall requested me to obtain for him the opinions of the captains of the Kingstown mail boats with respect to the usefulness of gun flashes in foggy weather. I have obtained most satisfactory affirmative statements from them, and herewith enclose copies of them for your information. You will perceive that the three captains unite in saying that in some cases the flashes were seen when no sound of explosion was heard, thus proving the advantage of a brilliant flash.

I should feel very glad if your Board would permit me to make some further comparisons between gas and gunpowder guns at Howth Bailey Lighthouse. You are aware that the matter deeply concerns maritime interests, and Dr. Tyndall evidently considers it of much importance; for he stated to me that he would strongly support any application that might be made to the Board of Trade on the subject, and that he had little doubt that the Board of Trade would cheerfully sanction the necessary expenditure, provided it were not unreasonably great. I calculate that about 20*l.* would cover my expenditure for making an exhaustive set of trials as to the power of the flashes of the respective kinds of guns.

I am, &c.
(signed) *John R. Wigham.*

W. Lees, Esq., Secretary, Board of Irish Lights.

Enclosure 2, in No. 37.

Kingstown, 23 November 1873.

Sir,

In answer to your inquiry, I beg to say that I have found the guns stationed on the Kish Light and the North Stack to be of great service to me in thick weather, when approaching the harbours of Kingstown and Holyhead respectively. When the lights of the lightship and of the Stack lighthouse have been quite invisible by reason of the density of the fog, I have distinctly seen the flash of the gun, making, as it were, an impression on the fog, and indicating quite plainly the position in which the gun was placed. In some cases I have been able to see the flash when no sound from the gun has reached me, and I am therefore of opinion that the more brilliant such flashes could be made, the better for maritime purposes.

I am, &c.

(signed) *Richard S. Triphook,*

J. R. Wigham, Esq., Dublin. Commander, "Ulster" Royal Mail Packet.

P.S.—In fogs also which occur in the daytime I have been able to see the gun-flash, and thus know my bearings.

(signed) *R. S. Triphook.*

Enclosure 3, in No. 37.

Sir, 1 December 1873.

I beg to inform you that the gun at the Kish lightship, and also that at the North Stack, have been of very great advantage to me in foggy weather. I have on several occasions seen the flashes of these guns when the lights in the lighthouse have been entirely obscured, owing to the thickness of the weather, and thus their bearings have been clearly pointed out to me. Frequently I have seen the flash of the gun, although unable to hear its report. It is evident that the brighter these flashes can be made, the more useful they will prove to be.

I am, &c.,

(signed) *Chas. Jno. Slaughter,*

John R. Wigham, Esq., Dublin. Commanding R.M.S. "Leinster."

Enclosure 4, in No. 37.

Sir, Kingstown, 1 December 1873.

In reply to your inquiry, I beg to inform you that I have several times seen the flashes from the guns at the Kish lightship, and at the North Stack, when, owing to dense fogs, the lights themselves have been invisible. These flashes have thus proved very useful to me, by showing me clearly my position. On various occasions I have perceived the flash of the gun when I could not hear its sound. In my opinion these gun flashes are very advantageous to seamen, and, of course, it is very desirable that they should be as vivid as possible.

I am, &c.

(signed) *T. E. Kendall,*

John R. Wigham Esq., Dublin. Commanding R.M.S. "Connaught."

— No. 38. —

Board of Trade to Trinity House.

(H. 6058.)

Board of Trade, Harbour Department,

Sir, Whitehall Gardens, S.W., 3 January 1874.

With reference to previous correspondence relative to the employment of gas for lighthouse purposes, I am directed by the Board of Trade to transmit herewith, for the information of the Corporation of Trinity House, copies of three reports forwarded to them by the Commissioners of Irish Lights, from the captains of the Holyhead and Kingstown mail steamers, with respect to the usefulness of gun flashes in foggy weather, which Mr. Wigham states have been obtained, at the suggestion of Professor Tyndall, in connection with recent experiments at Howth Bailey upon the comparative brightness of the flashes of guns discharged respectively by gas and gunpowder.

I am, &c.

The Secretary, Trinity House. (signed) *C. Cecil Trevor.*

— No. 39. —

Board of Trade to Commissioners of Irish Lights.

(H. 6058.)

Board of Trade, Harbour Department,
Sir, Whitehall Gardens, S.W., 3 January 1874.

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 23rd ultimo, forwarding a communication from Mr. Wigham relative to the recent experiments on the comparative brightness of the flashes of fog-signal guns discharged respectively by gas and gunpowder, and requesting the sanction of this department to the necessary expenditure for further experiments, and in reply I am to acquaint you, for the information of the Commissioners of Irish Lights, that the Board sanction, as requested in your letter, an expenditure not exceeding 20 *l.* for the above purpose.

I am at the same time, however, to point out, with reference to the opinions of the captains of the Holyhead and Kingstown mail steamers, that gas could not well be used on board a light vessel, and that it would probably not be economical to employ it at a station where, as at the North Stack, there is no lighthouse.

I am, &c.
The Secretary to the (signed) *C. Cecil Trevor.*
Commissioners of Irish Lights.

— No. 40. —

Trinity House to Board of Trade.

(H. 7241.)

Trinity House, London, E.C.,
Sir, 30 November 1874.

I AM directed to transmit, for the information of the Board of Trade, the accompanying copies of correspondence which has passed between the Commissioners of Irish Lights and this Corporation respecting the proposed fog-signals to be placed on Poer Head and Tory Island, from which it will be seen that the statutory sanction of this Board has been given to the establishment of syrens thereat, the former to be sounded for five seconds every two minutes, and the latter five seconds every three minutes.

I am, &c.
The Assistant Secretary, (signed) *Robin Allen.*
Harbour Department, Board of Trade.

Enclosure 1, in No. 40.

Sir, Irish Lights Office, Dublin, 5 September 1874.

WITH reference to your letter of 13th June last, stating the Elder Brethren were prepared, on application from this Board, to accord their statutory sanction to the placing of fog signals at certain stations enumerated, I am to request you will be kind enough to inform me at what places on the west coast of England and Wales the Elder Brethren propose to establish fog signals, and the distinctive character of each, in order that this Board may be enabled to suggest for their proposed stations such signals as cannot be mistaken for those on the opposite side of the Channel.

I am to add the Commissioners suggest a syren as the best signal for Poer Head, and either a syren or a gun on western point of Tory Island, and in connection with which they would be glad to be favoured with the opinion of the Elder Brethren.

I am, &c.,
The Secretary, Trinity House, London. (signed) *W. Lees.*

Enclosure 2, in No. 40.

EXTRACT of LETTER to the Secretary, Irish Lights Office, Dublin, dated 30th September 1874.

"I AM to add, with reference to the suggestions of the Commissioners for Irish Lights, that a syren would be the best signal for Poer Head, and either a syren or gun on the western point of Tory Island, that the Elder Brethren see no objection thereto, but would be disposed to prefer a syren to a gun as respects the latter station; they will, however, be prepared to consider the same for statutory sanction so soon as the proposed intervals shall have been determined on."

(signed) *Robin Allen.*

Enclosure 3, in No. 40.

Sir, Irish Lights Office, Dublin, 9 November 1874.

THE Commissioners of Irish Lights having had under consideration your letter of the 30th September last, on subject of the character of the fog signals proposed to be placed at Poer Head and Tory Island, I am to state they agree with the suggestion of the Elder Brethren as to the placing of syrens at the above stations, and they would recommend that the syren at the former station be sounded for five seconds every two minutes, and at the latter five seconds every three minutes; I am therefore to request the Elder Brethren will be pleased to accord their statutory sanction to this arrangement.

I am further to state the Commissioners will feel much obliged if the Elder Brethren will be so good as to forward any plans and specifications of such a syren as they would recommend for adoption.

I am, &c.,

The Secretary to the Trinity House, London. (signed) *W. Lees.*

Enclosure 4, in No. 40.

Sir, Trinity House, London, E.C., 28 November 1874.

I AM directed to acknowledge the receipt of your letter, dated 9th instant, further relative to the proposed fog signals for Poer Head and Tory Island, and conveying, as requested, the statutory sanction of this Corporation to the placing of syrens thereat, the former to be sounded for five seconds every two minutes, and the latter for five seconds every three minutes. I am to suggest, for the consideration of the Irish Commissioners, whether it may not be desirable to determine upon their complete system of fog signals.

As respects your request for a description of the syren which the Elder Brethren would recommend, I am directed to acquaint you that the instrument used at South Foreland, and referred to in the report of experiments thereat, was a steam syren obtained from Messrs. A. & F. Brown, of Lewis-street, New York, and that those which are now being constructed in this country are in the hands of Professor Holmes, at Messrs. Buckett Brothers, Gravel-lane, Southwark, and are intended to be worked by caloric engine and blown by compressed air.

I am, &c.,
(signed) *Robin Allen.*

Note.—The statutory sanction of the Board of Trade was given to this application on 7th December 1874.

— No. 41. —

Commissioners of Irish Lights to Board of Trade.

(H. 2628.)

Irish Lights Office, Westmoreland-street,
Sir, Dublin, 27 March 1875.

Referring to your letter of 7th December last, also to your letters of same date addressed to the Trinity House, sanctioning the placing of steam sirens at Poer Head and Tory Island, and requesting in your letter to this department an estimate of cost for the signal, I have to acquaint you, the Commissioners invited tenders from Professor Holmes for supply of a syren same as constructed for the Elder Brethren, and also, subsequently invited a tender from Messrs. Edmundson for three steam syrens same as herewith forwarded, from which it will be perceived the price demanded by Professor Holmes for a 1st, 2nd, and 3rd class syren, worked by caloric engines (including the latter in duplicate), amounts to 1,540 *l.*, 1,175 *l.*, and 750 *l.* respectively, but does not include carriage to Dublin, or erection, and which would amount, in addition to the above, No. 1, 260 *l.*; No. 2, 210 *l.*; No. 3, 200 *l.*; the tender of Messrs. Edmundson for supply of three 1st class steam syrens, amounting to 350 *l.* each, including duplicate parts of those portions of the syren which are liable to wear and tear. The syrens of Professor Holmes are described as being worked by compressed air, driven by hot-air engines. Messrs. Edmundson's syrens are driven by steam supplied direct from an ordinary vertical tubular steam boiler. The great difference in amount between the two tenders was so great, that the Commissioners thought it right to look very carefully into the subject before coming to a decision. They therefore asked Messrs. Edmundson whether they would be willing at their own expense to send one of their syrens to Howth Bailey Lighthouse, in order that experiments might be made with it there, with the view of the Commissioners satisfying themselves respecting the power of its sound, and more especially that they might make a comparison between the sound of the syren and that of the powerful Daboll's fog trumpets, which is established at that station. Messrs. Edmundson consented to this, but intimated that the power of the syren would thus but be imperfectly shown, as any arrangements they could make of a temporary character, while giving a fair approximate idea of the effect of the syren, would not develop the full sound of the instrument; nevertheless, the Commissioners requested them to make the best temporary arrangements they could to carry out the wishes of the Board. Messrs. Edmundson accordingly sent to Howth Bailey a portable agricultural steam boiler, and had the syren mounted upon it.

When the whole apparatus was ready, the trials and comparisons were carefully made from the steamer "Princess Alexandra." Several of the Commissioners took part in the investigation, accompanied by their Inspector of lights and their engineer; it was their unanimous opinion, that notwithstanding the disadvantageous circumstances in which the siren was placed, the trials clearly showed that it is a powerful and distinctive fog signal. The individuality of its sound specially impressed them, and they agreed it was only reasonable to suppose, that if attached to a boiler of proper size, the sound of the syren would be found to come up to the description given of it in Doctor Tyndall's Report, namely, "That the steam syren is beyond question the most powerful fog signal which has hitherto been tried in England."

For these reasons, as well as for the very important consideration of the large saving to the Mercantile Marine Fund, the Commissioners have no hesitation in recommending the purchase from Messrs. Edmundson of one of their best steam syrens, that they may have the opportunity of seeing it in its complete and perfect form before they proceed further in the matter, the syren to be suitable for any station which may be selected, and the cost not to exceed the sum of 350 *l.* mentioned in Messrs. Edmundson's tender.

I am, &c.
(signed) *W. Lees.*

The Assistant Secretary,
Harbour Department, Board of Trade.

Enclosure 1, in No. 41.

15, Walham Grove, Walham Green,
Sir, 23 December 1874.

I WAS in hopes before this to be enabled to send you the estimates you require, but as these apparatus are altogether a new arrangement, it has taken all the time since I received your letter, and I find it will take me some days yet before I shall be in a position to fix a price.

In the meantime I should be obliged if you would inform me whether the caloric engines and air pumps are to be fixed in the same place as the sirens, or at a distance from them, and if the latter, at what distance will the caloric engines be fixed from the sirens in each case.

I do not undertake any builders' work, but send men to erect the machinery only; neither could I undertake to deliver the apparatus at the two places named, but will deliver the same either in London or in Dublin, as you may decide. It will assist me in my estimate for the fixing, if you will oblige by saying what accommodation there is for the men at the two stations.

The Trinity Corporation require for each station two caloric engines in case of accident; do you require the same?

I am, &c.
W. Lees, Esq. (signed) *T. H. Holmes.*

Enclosure 2, in No. 41.

Sir, Irish Lights Office, 28 December 1874.

I HAVE read letter from Professor Holmes of the 23rd instant, which you have kindly handed to me, and beg to say that as there is ample room at the stations, Poer Head and Tory Island, for arrangements, these can be made to suit the convenience of the Professor's design, so that the caloric engines and air pumps can be placed to suit his plans. I would suggest that the apparatus be delivered at the North Wall, Dublin, and from thence conveyed by the Commissioners as may seem suitable to them.

At Tory Island the man sent by Professor Holmes can be lodged on the spot, at Poer Head lodgings can be had at a short distance in the village of Aghador. Two caloric engines will be required for each station.

Yours, &c.
W. Lees, Esq., Secretary. (signed) *John S. Sloane.*

P.S.—I would suggest an interview with Professor Holmes, as being more satisfactory than writing.

Enclosure 3, in No. 41.

15, Walham Grove, Walham Green,
Sir, London, 13 January 1875.

I SEND you the prices of the three principal fog signals that I make, and as soon as you will let me know which of the three you decide on having, I will send such tracings as may be required to indicate size of buildings, foundations, &c., and as I have in hand for the Trinity House three first-class and 11 second-class siren apparatus, and four 32-inch caloric engines for electric light, I beg that you will give me as much time as possible to complete your order.

The prices I give for erecting do not include any masons', bricklayers', or joiners work, nor the time the men may be delayed by the corporation or weather. All such delays to be considered as extra time, and to be paid at the rate of 1 *s.* 4 *d.* per hour for a fitter, and 10 *d.* per hour for a labourer. I will send the men over to erect the apparatus as soon as I receive notice that everything is ready for them to commence the erection.

The price of a first-class siren fog-signal apparatus, the same as the Trinity House have adopted for land stations, consisting of two 32-inch cylinder caloric engines, two air vessels, and air pumps, and one siren apparatus, delivered in London, is - - £. 1,660
Packing, carriage, and insurance to Dublin, and erecting - - 260

£. 1,920

The price of a second-class siren fog-signal apparatus, the same as the Trinity House have adopted for floating light ships, consisting of two 24-inch cylinder caloric engines, two air vessels and air pumps, and 1 siren apparatus, delivered in London, is - £. 1,175
Packing, carriage, and insurance to Dublin, and erecting - - 210

£. 1,385

The

The price of a first-class fog-horn signal apparatus, consisting of two 24-inch cylinder caloric engines, and one automatic apparatus sounding two horns* simultaneously at any desired interval, from 20 seconds to two minutes - - - - -	£. 750
Packing and carriage, and insurance to Dublin, and erecting -	200
	£. 950

I am, &c.
(signed) *T. H. Holmes.*

W. Lees, Esq., Secretary,
&c. &c. &c.

Enclosure 4, in No. 41.

15, Walham Grove, Walham Green,
London, 16 January 1875.

Sir,

I FIND there was an error in the price of the first-class siren apparatus, instead of 1,660 *l.* it should be 1,540 *l.*, which is the price delivered in London; the price for packing, carriage, and fixing is correct, viz., 260 *l.*; the total is therefore 1,800 *l.* instead of 1,920 *l.*, as sent.

I am, &c.
(signed) *T. H. Holmes.*

W. Lees, Esq.

Enclosure 5, in No. 41.

To the Commisioners of Irish Lights.

28 January 1875.

WE propose to supply to the Commissioners of Irish Lights three first class steam sirens, according to the following specification, for the sum of three hundred and fifty pounds sterling each, say 350 *l.* each.

(signed) *J. Edmundson & Co.*,
35, Capel-street, Dublin.

SPECIFICATION.

THE sirens to be fitted with holophone reflectors or trumpet mouth-pieces of the form best suited for the position in which they are to be placed, and if required, to have rotating or oscillating movement, as may be necessary, to cause them to traverse the whole or portion of the horizon. They are to be entirely automatic in their action, and to be mounted upon vertical tubular steam boilers about 7 feet by 3 feet, with furnace mountings, bed plates, pressure gauges, fusible plugs, wrought-iron funnels, &c., complete. The boilers to be proved to 120 lbs. pressure, but the sirens to be worked at a pressure of about 20 lbs. These dimensions and particulars are fixed upon with a view of rendering the sirens particularly suitable for use on board light ships or at isolated rock stations. They are to be so constructed that they can be set to work in a very short time, and be managed by any ordinary labourer or light-keeper, having no complicated machinery connected with them to require skilled attendances. The sound to be of the all-pervading character described by Dr. Tyndall in his report respecting the experiments at South Foreland, and not easily quenched by local noises, such as the motion of paddle wheels, blowing off of steam, noise of breakers, &c. Duplicates of each of the parts of the siren which are removable to be furnished with each.

(signed) *J. Edmundson & Co.*

Note.—These sirens are so constructed that they may be sounded by compressed air if required.

— No. 42. —

Board of Trade to Commissioners of Irish Lights.

(H. 2626.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W., 7 April 1875.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 27th ultimo, transmitting tenders from Messrs. Edmundson and Mr. Holmes, for

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* For the capability of these horns, I beg to refer to Captain Hills at Liverpool.

for the supply of siren fog signals for Poer Head and Tory Island Stations (together with report on the same by Mr. Sloane), and stating, that having regard to the greater power claimed for the steam siren, and the large saving which would result from the use, instead of that supplied by Mr. Holmes, the Commissioners of Irish Lights would recommend the purchase of one of Messrs. Edmundson's sirens, as an experiment, at a cost not exceeding 350 *l.*

The Board of Trade accord their sanction to the expenditure in question.

The enclosures to your letter are herewith returned.

I am, &c.

The Secretary, (signed) *C. Cecil Trevor.*
Commissioners of Irish Lights.

— No. 43. —

Board of Trade to Trinity House.

(H. 2626.)

Board of Trade, Harbour Department,
Sir, Whitehall Gardens, S.W., 7 April 1875.

Referring to previous correspondence relative to the comparative merits of different fog signals, I am directed by the Board of Trade to transmit herewith, copy of a letter which has been received from the Commissioners of Irish Lights, respecting the purchase of sirens for Poer Head and Tory Island, of the specification of Messrs. Wigham, for the instrument named in the Commissioners' letter, and of the letter which the Board have caused to be addressed to the Commissioners in reply.

Having regard to the very large difference in the expense of the two signals, the Board of Trade consider it important that the Corporation of Trinity House should satisfy themselves of the relative merits of these instruments before contracting for any more of the expensive kind.

I am, &c.

The Secretary, Trinity House. (signed) *C. Cecil Trevor.*

— No. 44. —

Board of Trade to Commissioners of Northern Lighthouses.

Similar Letter to No. 43.

— No. 45. —

Trinity House to Board of Trade.

(H. 3289.)

Trinity House, London, E.C.,
Sir, 22 April 1875.

I am directed to acknowledge the receipt of your letter, dated 7th instant, transmitting copy of correspondence with the Commissioners of Irish Lights, relative to the purchase of sirens upon the specification of Messrs. Edmundson, and stating, that having regard to the very large difference between the expense of these signals and of those offered by Professor Holmes, the Board of Trade consider it important that this Corporation should satisfy itself of the relative merits of these instruments before contracting for any more of the expensive kind.

In reply thereto, I am to observe, that the specification of Messrs. Edmundson is so vague as to the durability and quality of the work, and the extent of duplication in the sirens and as to the method of construction, which will render steam apparatus safely manageable by an ordinary labourer, that it does not afford any adequate data for the comparison suggested, and that neither does it appear

appear from the trial made by the Commissioners whether the apparatus, although doubtless a powerful and distinctive fog signal, was so powerful or distinctive as might have been one of Mr. Holmes' more complete instruments.

It will be seen from the enclosed copy of a report from Mr. Douglass, that if the entire apparatus were duplicated (as is done in the United States, and as is obviously expedient at lighthouse stations), and that reasonable items for rain catch and reservoir, and for the skilled labour which the Elder Brethern regard as essential with steam, were added, the economy would probably be in favour of the caloric apparatus sounded by compressed air, and as the Elder Brethren and Mr. Douglass are alike satisfied that the siren so sounded is quite equal to that described in Dr. Tyndall's report, it does not appear to them that, either upon the ground of efficiency or economy, there is anything in Messrs. Edmundson's proposal which would warrant its adoption in preference to the instrument obtainable from Mr. Holmes.

I am, &c.

The Assistant Secretary, (signed) *Robin Allen.*
Harbour Department, Board of Trade.

Enclosure in No. 45.

Sir, Trinity House, 19 April 1875.

Pursuant to the reference of the Board, under date 13th instant, I have perused the letter of the Board of Trade, enclosing correspondence relative to tenders obtained from Professor Holmes and Messrs. Edmundson, for siren fog signals, for Poer Head and Tory Island, and beg to offer the following observations thereon:—

The siren signals offered by Professor Holmes, and stated to be the same as those constructed by him for the Trinity House, being worked by caloric engines, thus sounding the siren by compressed air, at the price of 1,540 *l.*, 1,175 *l.*, and 750 *l.* respectively, exclusive of carriage to Dublin, and erection at the stations, which items are estimated to amount, in addition to the above, to 260 *l.*, 210 *l.*, and 200 *l.* respectively.

The siren signals offered by Messrs. Edmundson & Co., and stated to be sounded by steam at a pressure of about 20 lbs. per square inch, supplied by a vertical tubular boiler about 7 feet high by about 3 feet diameter.

I would here remark that the lowest efficient pressure for a siren to be sounded at has been found to be 30 lbs.

The price of this apparatus is stated to be 350 *l.* With the view of fairly comparing the relative cost of these apparatus, the second-class apparatus of Professor Holmes should be compared with that of Messrs. Edmundson, as being fairly equal in power.

The comparative cost would thus be 1,175 *l.*, plus carriage to Dublin, and erection 210 *l.*; total 1,385 *l.*

The tender of Messrs. Edmundson is not for a duplicate apparatus, and could not therefore be entertained.

The price of such an apparatus would probably be about 700 *l.*

To this sum is to be added the cost of the water supply; a very uncertain, but usually expensive, item at lighthouses.

If a rain catch and reservoir are to be provided, as is usually the case, the cost of this work, together with the necessary pipes, cannot be estimated at less than 300 *l.*, making a total of 1,000 *l.*, as against 1,385 *l.*, for the apparatus of Professor Holmes.

With these two apparatus it may be fairly assumed that the expenditure of fuel will be nearly equal; but in the case of the compressed air siren we have an apparatus which is, at all times, perfectly safe in the hands of an ordinary lightkeeper (a very material point); but the steam siren could not, in my opinion, be considered safe from explosion, unless in the charge of a properly qualified attendant, whose services would command a higher rate of salary than those of a light keeper.

It is stated in the specification of Messrs. Edmundson & Co., that the steam siren referred to has been designed with the view of rendering it suitable for use on board light vessels.

For such service the same objection to steam arise, except with respect to the water supply.

It is, however, to be remembered that this would be salt water, and consequently the wear and tear of the boiler would be considerably increased, while the consumption of fuel would also be augmented fully 25 per cent.

From the above considerations, I am of opinion that, irrespective of the important question of perfect safety, the apparatus sounded by compressed air will be found to be more economical than that sounded by steam.

I am, &c.

Robin Allen, Esq. (signed) *Jas. N. Douglass.*

— No. 46. —

Board of Trade to Commissioners of Irish Lights.

(H. 3289.)

Board of Trade, Harbour Department,
Whitehall Gardens, 29 April 1875.

Sir,

With further reference to your letter of the 27th instant, transmitting tenders from Messrs. Edmundson and Mr. Holmes for the supply of fog signals for Poer Head and Tory Island, I am directed by the Board of Trade to state that on receipt of the same they caused copies thereof to be sent to the Corporation of Trinity House and the Commissioners of Northern Lighthouses with a view of enabling those authorities to satisfy themselves of the comparative merits of the rival instruments before contracting for any more of the expensive kind.

I am now to transmit a copy of a letter on the subject which has been received from the Elder Brethren, and to request that the Board may be favoured with any observations the Commissioners may have to offer thereupon.

I am, &c.
(signed) *R. G. C. Hamilton.*

The Secretary to the
Commissioners of Irish Lights.

— No. 47. —

Commissioners of Irish Lights to Board of Trade.

(H. 3958.)

Irish Lights Office, Westmoreland-street,
Dublin, 18 May 1875.

Sir,

With reference to your letter of the 29th ultimo, transmitting copy of correspondence with the Trinity House and their engineer, in connection with the comparative merits of the siren fog signals of Mr. Holmes and Messrs. Edmundson & Co., I am instructed to forward herewith, for the information of the Board of Trade, copy of a report by the engineer to this Board on the several documents, and which has been approved.

I am, &c.
(signed) *W. Lees*, Secretary.

The Assistant Secretary,
Harbour Department, Board of Trade.

Enclosure in No. 47.

Londonderry, 8 May 1875.

Sir,

I have this day received your letter containing Board's order, referring communication from Board of Trade, enclosing letter from Elder Brethren of the Trinity House of 22nd ultimo, to me, and beg to report—

That on the subject of the estimates of Messrs. Edmundson and Mr. Holmes for supplying fog siren apparatus, and a report from Mr. Douglass, I beg to say that the facts of the case seem to me to be clear and simple.

On the 13th January last Mr. Holmes tendered to supply one first-class caloric siren for 1,920 *l.*, afterwards offering to reduce the price to 1,800 *l.*; on 26th of same month Messrs. Edmundson & Co. tendered to supply one first-class steam siren for 350 *l.*, by the adoption of which a saving would be effected of 1,450 *l.* Messrs. Edmundson's tender included duplicate parts of the siren liable to wear; I do not find any such other provision in Mr. Holmes' tender.

A reference to the papers will show that Messrs. Edmundson's siren is specified to that tried at the South Foreland, of which Dr. Tyndall says in his report on fog signals, "the steam siren is, beyond question, the most powerful fog signal which has hitherto been tried in England."

Mr. Holmes' caloric siren is, so far as I have any information, as yet untried; thus I have no means of knowing whether (as inferred by the Elder Brethren) the Messrs. Edmundson's steam siren was a less effective signal than that of Mr. Holmes; and I am at a loss to understand how Mr. Douglass can classify it with the second power signal of Mr. Holmes.

There is no occasion to use reservoirs for fresh water, as suggested, it being proposed, as in the case of all steamboats, to use salt water; and no skilled knowledge beyond what is already

already possessed by many of our light-keepers, will be required in the case of the steam siren; whilst, on the contrary, from what I have observed at Howth Bailey, and the wear and tear of the heating portion or cockles of the caloric engine there, renders it absolutely necessary to have skilled labour very frequently employed; and when we consider the greatly increased size of Mr. Holmes' engines, it becomes at once apparent that the necessity is increased.

For these reasons, you will see that I cannot concur in the opinion of Mr. Douglass, that the siren signal apparatus sounded by compressed air will be found more economical than that sounded by steam; and as to safety and liability to derangement, I consider the balance of advantages will be found largely on the side of the steam siren.

I am, &c.
(signed) *John S. Sloane.*

The Secretary,
Commissioners of Irish Lights.

— No. 48. —

Board of Trade to Trinity House.

(H. 3958.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W., 22 May 1875.

Sir,

Referring to my letter of the 7th ultimo, and your reply of the 22nd ultimo, conveying the observations of the Elder Brethren of the Trinity House on the relative merits of Mr. Holmes' and Messrs. Edmundson's siren fog signals, I am now directed by the Board of Trade to transmit copy of a further report on the subject addressed by Mr. Sloane to the Commissioners of Irish Lights, who have stated to this Board that they have approved the report.

Enclosure in No. 47.

I am, &c.
(signed) *C. Cecil Trevor.*

The Secretary, Trinity House.

— No. 49. —

Board of Trade to Commissioners of Irish Lights.

(H. 3867.)

Board of Trade, Harbour Department,
Whitehall Gardens, S.W., 24 May 1875.

Sir,

I am directed by the Board of Trade to call attention to correspondence which passed in the year 1873, relative to the establishment of a fog signal on Tuskar Rock, and also to my letter in connection with the same subject of the 29th July 1873, stating that the signal had been sanctioned by the Board of Trade on the understanding that the question of its character should be allowed to stand over pending the results of experiments then going on at South Foreland.

Nos. 31 to 36.

I am to remind the Commissioners that the report of Professor Tyndall on these experiments was presented to Parliament last Session, and that the Elder Brethren of the Trinity House have decided upon several new fog signals, and I am to inquire whether the Commissioners of Irish Lights have taken any steps in the matter of the characteristic of the signal to be adopted at Tuskar.

I am, &c.
(signed) *C. Cecil Trevor.*

The Secretary to the
Commissioners of Irish Lights.

FOG SIGNALS.

COPY of CORRESPONDENCE with the Board of Trade respecting any FOG SIGNALS authorised by the three General Lighthouse Authorities, or sanctioned by the Board of Trade, since 18th February 1873 (in continuation of Parliamentary Papers, No. 119, of Session 1873, and No. 188, of Session 1874).

(Mr. Cavendish Bentinck.)

Ordered, by The House of Commons, *to be Printed,*
27 *May* 1875.

[*Price* 8 *d.*]

224.

Under 6 *oz.*

PAPERS

RELATING TO

REGULATIONS FOR GRAIN CARGOES AT MONTREAL AND NEW YORK.

Presented to both Houses of Parliament by Command of Her Majesty.

I. CANADA.

EXTRACTS FROM THE CANADIAN LAW, AND REGULATIONS MADE THEREUNDER.

EXTRACT FROM THE STATUTE OF CANADA.

34th year of the Reign of Queen Victoria, cap. 33.

AN ACT to provide for the Appointment of a Port Warden for the Harbour of Quebec.

Duty of Masters of Vessels taking Grain in Bulk.—Duties of Port Warden as to such Vessels.

12. The Master of any vessel intending to load grain in bulk, for any Port not within the limits of inland navigation, shall, before taking in any of such grain, notify the Port Warden, from time to time while the different chambers are being prepared, to survey and inspect the said vessel; the Port Warden in such case shall ascertain whether such vessel is in a fit state to receive and carry the cargo intended for her to its destination; he shall record in his books the condition of the vessel; if he finds she is not fit to carry the cargo in safety, he shall state what repairs are necessary to render her seaworthy; before beginning to load each chamber he shall be careful to see that such chamber is in a fit and proper state and condition to receive grain, and should he deem it necessary, he may order that such chamber be properly dunnaged and lined, and provided with shifting boards or, that the same be dunnaged or lined or provided with shifting boards; and he shall see that the boards and plank used for these purposes are properly seasoned; he shall examine the pumps and see that they are properly lined and dunnaged; he shall enter in the books in his office all particulars connected with these surveys and grant the necessary certificates.

His Duties as to Dunnage.

13. It shall be the duty of the Port Warden, when required, to decide if any and what amount of dunnage is necessary below cargo, and also between wheat or other grain, and the cargo to be stowed over it, and his certificate shall be *primâ facie* evidence of the good stowage of the cargo so far as these points are concerned.

As to Seaworthiness of Vessels.

14. The Master of any vessel wholly or partly laden with grain for any Port not within the limits of inland navigation shall, before proceeding on his voyage or clearing the Custom House for the same, notify the Port Warden, whose duty it shall then be to proceed on board such vessel and examine whether she is in a fit state to proceed to sea or not; if she is found unfit the Port Warden shall state in what particulars and on what conditions only she will be deemed in a fit state to leave, and shall notify the Master not to leave the Port until the required conditions have been fulfilled; and in case of the Master refusing or neglecting to fulfil the same, the Port Warden shall notify the Collector of Customs in order that no clearance may be granted for the vessel until such

required conditions have been fulfilled and a certificate thereof granted by the Port Warden or his Deputy.—*See Amendment of* 1873, *sec.* 5.

No Officer of Customs shall grant a clearance to any vessel wholly or partly loaded with grain, for the purpose of enabling her to leave the Port of Montreal for any Port not within the limits of inland navigation, unless nor until the Master of such vessel produces to him a certificate from the Port Warden or his Deputy, to the effect that all the requirements of the 12th section of this Act have been fully complied with, if such grain be laden in bulk; nor unless nor until such Master produces to him a certificate from the Port Warden or his Deputy that all the requirements of the 14th section of this Act have been fully complied with, if such vessel be wholly or partly laden with grain, otherwise than wholly or partly in bulk; and if any vessel wholly or partly loaded with grain attempts to leave the Port of Montreal without a clearance, for any Port not within the limits of inland navigation, any Officer of Customs, or any person acting under the direction of the Minister of Marine and Fisheries, or the Chief Officer of the River Police, may detain such vessel until such certificate is produced to him.—*See Amendment of* 1873, *sec.* 1.

Value or Measurement of Vessels.

15. The Port Warden shall, when required, estimate the value and measurement of any vessel, when the same is in dispute or otherwise needed, and shall record the same in the books of his office.

Additional Fees.

1. In addition to the fees authorized to be taken by the said recited Act for services performed by the Port Warden or his Deputies, the following fees and charges shall be paid by the shippers of the following articles from the Port of Montreal, in sea-going vessels, that is to say:—

On Grain.

On all grain shipped from the said Port, a fee not exceeding 25 cents for every 1,000 bushels, with a proportionate charge for every fractional quantity thereof.

EXTRACT FROM REGULATIONS ISSUED UNDER THE ABOVE ACT.

REGULATIONS AFFECTING VESSELS OUTWARDS.

13. The following scale is the limit to which ships of ordinary build should be laden, subject, however, in all cases, to the judgment of the Port Warden.

Vessels from	12 to 14	feet	depth of hold	to have $2\frac{1}{2}$	inches clear side to each foot depth of hold.
,,	12 to 17	,,	,,	$2\frac{3}{4}$	
,,	17 to 20	,,	,,	3	
,,	20 to 22	,,	,,	$3\frac{1}{4}$	
,,	22 to 26	,,	,,	$3\frac{1}{2}$	

14. No vessel over 450 tons register shall be permitted to load an entire cargo of grain in bulk—oats excepted. All vessels loading grain will be required to have a bulkhead not less than six feet from the bow and one foot from the stern.

15. No vessel will be permitted to take more than 12,000 bushels of grain in bulk without a bulkhead to divide it into compartments, no compartment to contain more than 12,000 bushels.

16. All vessels (loading grain in bulk) of 400 tons to be platformed or dunnaged not less than 9 inches at the kelson and 12 inches at the bilge; ships of 1,200 tons 12 inches at the kelson and 15 inches at the bilge, including the thickness of lining boards; other sized ships in proportion,—and lined with well-seasoned timber. Vessels under 600 tons register to have 2 inches of dunnage, over that tonnage to have 3 inches of dunnage, between the grain and other cargo. All vessels to be dunnaged and lined to the satisfaction of the Port Warden.

17. The Master of any vessel intending to load grain in bulk, for any Port not within the limits of inland navigation, shall, before taking in any of such grain, notify the Port Warden, from time to time while the different chambers are being prepared, to survey and inspect the said vessel; the Port Warden in such case shall ascertain whether such vessel is in a fit state to receive and carry the cargo intended for her to its destination;

he shall record in his books the condition of the vessel; if he finds she is not fit to carry the cargo in safety, he shall state what repairs are necessary to render her seaworthy; before beginning to load each chamber he shall be careful to see that such chamber is in a fit and proper state and condition to receive grain, and should he deem it necessary, he may order that such chamber be properly dunnaged and lined, and provided with shifting boards, or that the same be dunnaged or lined or provided with shifting boards; and he shall see that the boards and plank used for these purposes are properly seasoned; he shall examine the pumps and see that they are properly lined and dunnaged; he shall enter in the books in his office all particulars connected with these surveys and grant the necessary certificates.

18. The pumps of all vessels loading grain in bulk and, when necessary, the masts to be cased in; the casing round the pump to be large enough to allow a man to pass down the well not less than 4 feet × 5 feet; the casing to be of good workmanship, and of seasoned wood, so that the grain may not pass through. There must be also proper shifting boards on each side, which must be well secured to the stanchions, and the stanchions themselves well secured to the beams and kelson. Shifting boards to extend to at least two-thirds of the depth of the grain space, and to be provided also whenever grain in bags is laden between decks.

19. Great care should be taken to well fill the vessel with bulk grain under the decks, and it is advisable when vessels are filling up, that no more grain should be put on board than the number of labourers employed are able to trim and properly stow.

20. The following regulations with reference to the quantity of grain, in bulk, which vessels may be allowed to take in proportion to their tonnage, is to be observed in future, subject, however, to the judgment of the Port Warden:—

450 to 500 tons—42 bushels of 60 lbs. per register ton.				
500 „ 550 „ —41	„	„	„
550 „ 600 „ —40	„	„	„
600 „ 650 „ —38	„	„	„
650 „ 700 „ —37	„	„	„
700 „ 750 „ —35	„	„	„
750 „ 800 „ —34	„	„	„
800 „ 850 „ —33	„	„	„
850 and upwards—32	„	„	„

Should the vessel's carrying capacity in the lower hold exceed the scale, enough may be taken to raise the grain to not over six inches above the beams, provided always that the prescribed draught of water, when the vessel is loaded, be not exceeded.

Oats may be carried in bulk to any extent, irrespective of the tonnage of the ship, but subject to such regulations, with reference to dunnage, lining, and shifting boards, as the Port Warden may prescribe.

21. The Master of any vessel wholly or partly laden with grain for any Port not within the limits of inland navigation shall, before proceeding on his voyage, or clearing at the Custom House for the same, notify the Port Warden, whose duty it shall then be to proceed on board such vessel and examine whether she is in a fit state to proceed to sea or not; if she is found unfit, the Port Warden shall state in what particular and on what conditions only she will be deemed in a fit state to leave, and shall notify the Master not to leave the Port until the required conditions have been fulfilled; and in the case of the Master refusing or neglecting to fulfil the same, the Port Warden shall notify the Collector of Customs, in order that no clearance may be granted for the vessel until such required conditions have been fulfilled, and a certificate thereof granted by the Port Warden or his Deputy.

22. No Officer of Customs shall grant a clearance to any vessel, wholly or partly loaded with grain, for the purpose of enabling her to leave the Port of Montreal for any Port not within the limits of inland navigation, unless nor until the Master of such vessel produce to him a certificate from the Port Warden or his Deputy, to the effect that all the requirements of the 17th clause of these regulations have been fully complied with, if such grain be laden in bulk; nor unless or until such Master produces to him a certificate from the Port Warden or his Deputy that all the requirements of the 21st clause of these regulations have been fully complied with, if such vessel be wholly or partly laden with grain; and if any vessel, wholly or partly laden with grain, attempts to leave the Port of Montreal without a clearance, for any Port not within the limits of inland navigation, any Officer of Customs, or any person acting under direction of the

Minister of Marine and Fisheries, or the chief officer of the river police, may detain such vessel until such certificate is produced to him.

Table of Export Fees.

To be collected by the Port Warden of Montreal, under the Act 29 Vic. cap. 59, 1865, in amendment of the Act 26 Vic. cap. 52, 1863, and approved by His Excellency The Governor-General in Council, on shipments by sea-going vessels loaded for ports other than those in British North America.

ON GRAIN.

For every 1,000 bushels and every proportionate quantity of	wheat and peas	- - - - -	$0 15
Do.	do.	Barley - - - -	0 12
Do.	do.	Oats - - -	0 10
Do.	do.	Indian Corn - - -	0 10

II. NEW YORK.

Letter from Her Britannic Majesty's Consul at New York, with Regulations made by the Board of Underwriters there, concerning the Shipment of Grain Cargoes.

British Consulate General, New York,
24th June 1875.

Sir,

I have the honour to acknowledge the receipt of your letter (M. 6936) of the 7th instant, respecting special rules at New York in regard to the stowage of grain cargoes on board ship, acquainting me that the Board of Trade has been informed that up to about two years ago the rules were merely recommendations on the part of the underwriters; but, since that time, have been adopted either by the State or Federal Government; instructing me to forward two copies of the existing regulations, and any other information connected with this subject which I may deem of importance.

In reply, I have the honour to report to you that the rules to which you refer have never received the sanction of law by the Federal or State Legislatures. They are simply rules which the Board of Marine Underwriters at this port have adopted, and with which they require a strict compliance in the case of all vessels and their cargoes insured in any of the associated offices of the Board. I enclose copies of these rules as revised and amended in August last, and which are now in force.

Not long since, an attempt was made by members of the Produce Exchange in this city to adopt a code of rules in regard to the shipment and stowage of grain cargoes, which would protect the interest of shippers. The proposition was vigorously opposed by the ship brokers, and by all interested in the ship owning interest, and after a sharp contest the proposed code of rules was rejected by a majority of one only.

The rules were almost identical with those of the Board of Underwriters, and the chief object which the merchant shippers of grain sought was an independent code of their own, which they might enforce regardless of the action of insurance companies, whether English or American, more especially English companies.

The rules of the New York Board of Underwriters, until amended in August last, did not admit the loading of grain in bulk to an extent exceeding one half the registered tonnage of the ship, and in bins containing not more 1,200 bushels each; the vessel being permitted, of course, to carry other goods. But the amended rules permit the carrying of cargoes entirely of grain, and in bins of larger size, subject, however, to the additional provisions of the 15th and 16th rules.

When a vessel is about to load grain which is to be insured in one of the Board companies, the notice A. herewith enclosed is issued to the owner, agent, or master. Thereupon the vessel is placed under the inspection of the surveyor of the Board, whose duty it is to see that the rules are strictly complied with, and also to fix the draught of water and freeboard.

This being accomplished, and reported to the secretary of the Board, who notes all particulars in a register kept for the purpose, a permit to load (in the Form B.), signed by the surveyor, is issued. When the loading is completed, and the report thereof made to the Board, a certificate (in the Form C.), countersigned by the clerk of the

Board, is issued to the agent of the vessel, whereupon application is made for insurance. I enclose forms of applications used by several of the Board companies (1, 2, 3, 4), all of which it will be seen contain a warranty that the vessel shall be loaded under the inspection of the Board surveyor.

One of the forms of application is for a time policy; and in this case it will be observed that the former rule prohibiting the carrying of grain in bulk beyond half the registered tonnage of the vessel is enforced.

One of the most important duties of the surveyor is that of fixing the draught of water and freeboard. These are regulated, not by any rigid rule, but in accordance with the peculiar construction and circumstances of each vessel inspected. The accompanying copy of a letter from the surveyor of the Board of Underwriters, which contains interesting information on this subject, fully explains the principles and circumstances by which the Board is governed in assigning a draught and freeboard to vessels of the different descriptions therein mentioned.

Besides the surveyors of the Board of Underwriters, there are others usually termed "outside" surveyors, under whose inspection and survey a large number of grain cargoes are loaded in vessels not insured in the "Board" companies here; but principally at Lloyds or in English clubs. Attempts are frequently made to obtain insurance in "Board" companies on the certificate of an "outside" surveyor; but such applications are invariably refused, except in the case of one of the companies, which I am told has occasionally taken risks on such certificates in disregard of the agreement between the companies. In the cases of vessels coming here to load grain "under inspection," which is to be covered in some European Insurance Company, it is the uniform practice, as I am told, to place such vessels under the inspection of an "outside" surveyor, for the reason that such surveyors are more *liberal* in their allowance of draught, and less strict in regard to the matter of ceiling, &c. than the Board surveyors. The question of draught is, of course, the most important one for shipowners, and there is naturally a persistent contention on the part of their brokers and agents for the most liberal allowance, with a view to the carrying of the largest possible cargoes which, in the judgment of an outside surveyor, who is under no local control, may be considered safe and proper. Masters of vessels, I am also informed, are often urgent to carry heavier cargoes than are deemed prudent by Board surveyors, and even themselves, in order not to incur the dissatisfaction of their owners.

It appears to me advisable that the Committee at Lloyd's should come to some arrangement by which grain risks covered in vessels loaded at Atlantic ports in the United States should be subject to the inspection and certificate of a Board surveyor, and in accordance with the rules of the Board in force here. Such an arrangement would afford a protection to English underwriters, which, under the existing system, is uncertain. It would, moreover, establish a fair competition which, in my judgment, would by no means lessen their business, especially if the agreement embraced uniform rates. Summer risks in any event are now, I believe, and would continue to be, more extensively covered in England than here. But apart from the interests of underwriters, the safety of ships and of the lives of their crews would be greatly advanced by a general adoption of rules such as those now enforced by the New York Board of Underwriters.

I have, &c.,
E. M. Archibald.

The Assistant Secretary,
Marine Department,
Board of Trade, London.

(Enclosures.)

Office of the Board of Underwriters, New York,
June 24th, 1875.

Dear Sir,

In reply to your note of yesterday, asking as to the allowance of freeboard in iron, oak, and soft wood vessels respectively, as approved by me, I beg to state that in our earlier conversation on the subject of draught, I spoke of some of the differences between the several kinds of vessels as showing how faulty any uniform scale of freeboard would be, and that the Board of Underwriters, realising how many considerations could be brought to bear upon the subject, and the great difficulty in embracing all those in any prescribed rule, had concluded that the matter would be more satisfactorily treated if left to the judgment of the surveyor, whose practical acquaintance with the subject might compensate largely for the lack of strictly scientific guidance. So that without attempting to give specific rules, I will state some of the general conditions which are considered in connexion with the subject to which you refer.

The oak, or hard-wood vessel, taken as a standard of medium or average proportions, say of 1,000 tons register, would have a thickness of say 24 inches from top of skin to bottom of planking; while the soft-wood vessel is generally constructed with much thicker floors and ceiling, and frequently is 12 inches more, same way of measuring; so that, allowing the keel to be below the garboard of same depth, the soft-wood vessel would on same freeboard draw a foot more water. From this it would seem that 5 per cent. increase of freeboard might to this class of vessel be a proper addition, assuming that the vessel is of a character capable of safely carrying the cargo requisite to load her to the mark given. And this consideration becomes of much importance, as this class of vessels ages. We think the iron vessel entitled fully to standard rule of freeboard, though, from her comparative light draught, her advantages in ability to carry more weight is apparent.

We find that a scale of freeboard running from $2\frac{1}{2}$ inches for vessels of 12 feet depth of hold or under to 3 inches for vessels of 20 feet hold, is applicable in most cases to that class of vessels which is chiefly engaged in the carrying of entire cargoes of grain from this port to Europe. This rule, based as we suppose, upon the principle that one fourth of the measurement of the vessel below deck should be above water, is, of course, subject to many modifications owing to a difference in model and peculiarities of construction, and should be considered in connexion with the steering qualities of the vessel, the character of the voyage, and season of the year. And, it would appear that the foregoing scale was framed to suit a class of vessels whose depth would be from 40 to 60 per cent of their beam, so that deviations in this particular would seem to be a matter for consideration, and the following rule is considered, at times, applicable.

Representing by 50 per cent. a depth of hold equal to half the beam, and diverging therefrom as follows:—

Depth.				
80	per cent.	of the	beam	= 4
75	„	„	„	$3\frac{3}{4}$
70	„	„	„	$3\frac{1}{2}$
65	„	„	„	$3\frac{1}{4}$
60	„	„	„	3
50	„	„	„	$2\frac{3}{4}$
40	„	„	„	$2\frac{1}{2}$
30	„	„	„	2

And to illustrate which principle I enclose herewith a diagram roughly sketched.

The hour which you indicate as the time which your mail closes, prevents me from treating at more length a subject upon which so much could be said, but we are of the opinion that disaster is more frequently owing to an entire disregard of all rules than from the faultiness of those prescribed, imperfect as they may be.

Yours very respectfully
(Signed) G. D. S. Trask,
Surveyor.

E. M. Archibald, Esq.,
British Consul, New York.

Regulations.

Office of the Board of Underwriters,
New York, October 1860.

To Owners, Masters, and Agents of Vessels.

☞ *Vessels (insured in Offices of this Board) loading Grain in bags or bulk on Voyages from Atlantic Ports of the United States to Ports in Europe will be required to conform to the following Rules, to enable the Surveyor to issue the proper Certificate.*

1st.—The pump-well must be sufficiently large to admit of the passage of a man to the bottom of the hold, and room to work conveniently when there, say not less than four feet fore and aft, and five feet athwartship, (reference, however, must be had to the size of the keelson and assistant keelsons,) and must be cased from the bottom of the vessel to the lower deck beams.

2nd.—Access to the pump-well must be had either by a man-hole through the upper deck, or by a clear passage-way between decks from the after hatch. In no case must it be from the main hatch.

3rd.—Vessels being loaded with grain in bags must be dunnaged twelve inches on the floor, fifteen inches on the bilge, and four inches on the sides up to the beams. If the vessel be very flat, the dunnage in the bilge must be increased at the discretion of the Surveyor. In between decks must be dunnaged three inches from the sides, and two inches from the deck, and the dunnage laid athwartships, so that the water can run to the scuppers.

4th.—The dunnage in the hold must be entirely covered with sails or boards, so as to prevent any of the loose grain from running down on to the floor of the vessel, and thence to the pump-well. If sails are used, they must be of good quality, and free from holes. When boards are used, care must be taken that they have a firm and equal bearing on the dunnage, and that the edges and ends overlap so that the object above designated may be secured.

5th.—Two inch shifting planks, extending four feet from the beams downward, must be properly secured on each side of the stanchions in the hold, and between decks, to prevent the cargo from shifting, and care must be taken that the stanchions are well fastened at the top and bottom. In no case must single boards be substituted for planks.

6th.—Care must be taken that the bags which are stowed in the ground tier, as well as those that are next to the sides of the vessel, are in perfect order, and that the tiers are laid close and well filled. When stowed on bulk or loose grain, must have boards or sails under them, to prevent the bags from settling into the bulk grain.

7th.—Bulk or loose grain must be taken in bins prepared for that purpose. Materials for bins must be of perfectly seasoned stock; unseasoned lumber must not be used where it will come in contact with the grain.

8th.—Rules 1st and 2nd likewise apply to vessels being loaded with grain in bulk.

9th.—The floor of the bin must be laid on sleepers of scantlings $2\frac{1}{2} \times 4$ inches in size, 16 inches apart from centre to centre, supported by studs of a corresponding size, also 16 inches from centre to centre. It must be raised at least twelve inches from the floor of the vessel, in the bilge 15 inches, and in vessels that are very flat or sharp, increased or diminished at the discretion of the Surveyor. In no case must the floor of the bin be laid on loose dunnage, nor must it be laid on the bilge keelson, notwithstanding the keelson may be more than twelve inches high; but there must always be sufficient room for a water-course under it. The floor is considered as extending from the keelson to the side of the vessel, and not terminating at the bilge keelson. It must be laid with two thicknesses of boards, so that they will break joints at the edges and ends; and care must be taken that it be perfectly tight.

10th.—The studs for the forward and after bulkheads for vessels not exceeding 14 feet depth of hold, must be 4 × 6 inches in size and of one entire piece; for vessels of a greater depth than 14 feet they must be 4 × 8 inches. They must be set 20 inches apart from centre to centre, firmly secured at the top and bottom, and properly braced and cleeted on the ceiling to resist the pressure of the grain.

11th.—The sides of the vessel above the turn of the bilge must be ceiled after the manner of clapboarding reversed, and properly furred, so as to turn water from the grain; and all lodging knees, bosom knees, and open seams must be made grain-tight.

12th.—Shifting planks two inches thick must extend from the keelson to the deck on each side of the stanchions, fitted tight under and between the beams and carlins, and care must be taken that the stanchions are well secured at both ends, and not more than seven feet apart.

13th.—Masts and water tanks, either of wood or iron, must be properly cased to prevent damage from leakage.

14th.—Vessels being loaded with over 12,000 bushels of grain in bulk, must have one intermediate partition or bulkhead, so that no bin shall contain over 12,000 bushels. Vessels loading grain in bulk in quantity exceeding one-half their registered tonnage, or in bins exceeding 12,000 bushels each, on voyages from Atlantic ports of the United States to ports in Europe, will be required to conform to the foregoing, and also to the following rules:

15th.—Vessels with one deck, or one deck and beams, must have, in addition to the forward and after bulkheads, two trimming bulkheads (thus making a division of three compartments), extending $\frac{3}{4}$ down from the upper deck, except in cases where the between decks are laid forward and aft, when they shall extend only to the lower deck, and so placed that, in loading, the middle compartment will be entirely filled, and the end ones left to trim the vessel. In the end compartments, if not entirely filled, the grain must be covered by bags of grain, or else with sails or boards, and secured by stanchions or covered with weight. The studs for the trimming bulkheads must be not less than 3 × 6 inches, and set 22 inches from the centres, of one entire piece, extending the depth of the vessel, and all studs must be firmly secured at the top and botton, and properly braced and cleeted on the ceiling.

16th.—All vessels with two decks must have a midship bulkhead in the lower hold, and trimming bulkheads between decks.

17th.—Stevedores must see that the grain is well trimmed up between the beams, and the space between the beams completely filled. The draft of water to be regulated by the Surveyor.

18th.—Owners and masters are particularly requested to inform the Surveyor, at this office, of any vessel they may intend to load with grain.

☞ Wm. F. Morgan's plans for ceiling vessels carrying grain have the approval of the Board of Underwriters, and are especially recommended to shippers and ship-owners.

☞ Vessels loading strictly in conformity to the above rules will have a certificate to that effect from the Surveyors appointed by the Board of Underwriters furnished to the Board, and the respective insurance companies composing said Board will be duly notified thereof.

Amended August, 1874.

ELLWOOD WALTER,
Secretary, Board of Underwriters.

(A.)

Office of the Board of Underwriters,
New York, October 1874.

To Owners, Agents, and Masters of Vessels:

In case of insurance by the companies composing this Board, on grain from this port to a foreign port, it is required that the vessel shall be loaded under the inspection of the surveyor of the Board, and a certificate as to the proper loading and seaworthiness of the vessel in that particular obtained.

You are, therefore, particularly requested to give early notice in writing to the surveyor, at the office of the Board, 51, Wall Street, when vessels will be ready to load; upon the receipt of which the surveyor will superintend the ceiling of the vessel, and when ready for receiving grain, if approved, will issue a permit to load, fixing the draft of water, or freeboard, for which a fee of 10 dollars will be charged. On the completion of the loading of the vessel, if in conformity with the rules of the Board, a certificate will then be furnished.

The loading of the vessel will be facilitated if the master or agent will notify the elevator company or stevedore that the necessary permit has been obtained from the surveyor.

ELLWOOD WALTER,
Secretary, Board of Underwriters.

(B.)

Permit to Load.

New York, 187 .

The to be loaded with grain is properly fitted for cargo, and allowed to load to draft of feet inches, or with clear side of inches, measuring from under side of covering-board .

Fee, Ten dollars. Surveyor for Board of Underwriters.

(C.)

No. .

Office of the Board of Underwriters,
New York, 187 .

This is to certify to the companies represented in this Board, who are intrested as underwriters, that the of the burthen of tons register, whereof is master, for the present voyage, from this port to is now loaded with a cargo consisting (or purporting to consist) of

And that the extent and manner of loading is in conformity with the rules of this Board, and the vessel is drawing feet inches water, or has inches freeboard, and in my opinion is not overladen, nor, in that particular, unseaworthy.

Surveyor.

Countersigned,

Clerk of the Board.

Forms of Application.

No. 1.

To the Atlantic Mutual Insurance Company.

Please enter on Policy No. made for

on account of

$ on

on board the

at and from to

Bill of lading dated } Premium per cent.

Time of sailing: } Approved, Pres't.

Warranted by the assured, that vessels to be loaded with Grain from the Ports of New York, Philadelphia, or Baltimore for Foreign Ports, are to be loaded under the inspection of the Surveyor of the Board of Underwriters, and his certificate as to their proper loading and seaworthiness obtained.

Warranted by the assured free from claim on account of capture, seizure, detention, or destruction by or arising from any belligerent nation, or by or from any officer, civil or military, or other person claiming to act in their name, or under their authority or in their behalf.

Warranted by the assured that the vessel be commanded by a captain holding a certificate from the American Shipmaster's Association.

Master

187

No. 2.

[101.]

Insurance is wanted by for account of

funds current in the city of New York, to loss, if any, payable in

For $

on board the Master

and to be insured at and from to

Bill of lading, dated } Premium per cent. $

Time of sailing: } Binding, President

Applicant.

New York 187

Warranted by the assured, that vessels to be loaded with grain from the ports of New York, Philadelphia, or Baltimore for Foreign Ports, are to be loaded under the inspection of the Surveyor of the Board of Underwriters, and his certificate as to their proper loading and seaworthiness obtained.

Warranted by the assured free from claim on account of capture, seizure, detention, or destruction by or arising from any belligerent nation, or from any officer, civil or military, or other person claiming to act in their name, or under their authority or in their behalf.

Warranted by the assured that the Vessel be commanded by a Captain holding a certificate from the American Shipmaster's Association.

No. 3.

To the Insurance Company of North America.

Please enter on open policy of

$ on

on board the

at and from to

Please fill in date of sailing and bill of lading.

GOLD

Bill of Lading dated } Approved agents.

Time of sailing } if within the terms and conditions of the policy.

New York, 187

Warranted by the assured, that vessels to be loaded with Grain from the ports of New York, Philadelphia, or Baltimore for foreign ports, are to be loaded under the inspection of the Surveyor of the Board of Underwriters, and his certificate as to their proper loading and seaworthiness obtained. Proof of loss to be authenticated by the agent of the company, if there be one at the place such proofs are taken.

Warranted by the assured free from loss or expense arising from capture, seizure, restraint, detention or destruction, or the consequence of any attempt thereat, whether lawful or unlawful; and whether by the act of any belligerent nation or by governments of seceding or revolting states, or by unauthorised or lawless persons therein or otherwise; and whether occurring in a port of distress or otherwise; anything in this policy to the contrary notwithstanding.

No. 4.

Vessel on Time.

Insurance is wanted by for account of

loss, if any, payable to

For $ on vessel valued at $

and to be insured at and from the day of 187 ,

at noon, until the day of 187 , at noon.

If on a passage on the expiration of the term, with liberty to the assured to renew the policy for one, two, or three months at the same rate of premium, if application be made to the company on or before the expiration of the first term. The risk, however, is to terminate at any port at which she may first arrive during the said extended time, on her being moored therein 24 hours in good safety; a pro rata premium to be returned for each entire month not entered upon of the extended time, no loss or contribution being claimed. Warranted not to use ports on the continent of Europe north of Hamburg, nor to go east of Navarino in the Mediterranean, during the period insured; nor ports on the continent of Europe north of Antwerp between 1st November and 1st March; nor ports in the British North American provinces, except between the 15th May and 15th August. Also warranted not to use the West India Islands during the months of August and September. Also warranted not to use ports and places in Texas, except Galveston; nor foreign ports and places in the Gulf of Mexico; nor places on or over Ocracoke Bar; nor any of the West India Salt Islands; nor ports or places on the west coast of America north of Benecia, during the period insured; nor to use Min River nor Torres Straits. Each passage subject to separate average. Warranted not to carry lime under deck. Warranted not to carry grain in bulk, except from the ports of New York, Philadelphia, Baltimore, or San Francisco, and in all cases not to exceed, in tons of 2,240 pounds, one half the registered capacity under deck tonnage, and the loading to be under the inspection of a surveyor appointed by the Board of Underwriters for that purpose. The vessel is not to proceed to sea with grain in bags or bulk on board, without a certificate from such inspector that the vessel is properly laden and fitted for her intended voyage. Also warranted not to load in tons of 2,240 pounds more than her registered capacity under deck tonnage, with lead, marble, coal, and, or iron, on any one passage. Warranted not to abandon in case of capture, seizure, or detention, until after condemnation of the property insured; nor until ninety days after notice of said condemnation is given to this Company. Also warranted not to abandon in case of blockade, and free from any expense in consequence of capture, seizure, detention, or blockade; but in the event of blockade, to be at liberty to proceed to an open port and there end the voyage.

In case of claim for loss or damage, a deduction of one third from the cost of repairing or replacing the same shall be made after deducting the value of the old material, except in the case of anchors, and of sheathing of copper or other metal; a deduction of one fortieth from the expense of repairing or replacing the metal sheathing, or any part thereof (after first deducting the value of the old metal and nails), shall be made for every month since the vessel was last sheathed until the expiration of 40 months, after which time the cost of re-metalling or repairing the same, shall be wholly borne by the assured. If a technical total loss be claimed, similar deductions shall be made from the estimated repairs, and unless the net cost thereof would exceed a moiety of the value of the vessel after making such deductions, the loss shall be deemed partial only. The proof of loss to be authenticated by the agent of the company, if there be one at the place such proofs are taken.

Owner, What will be the premium?

Master,

Where and when built, New York 187.

Tonnage,

Decks, Binding, President.

When coppered,

When opened,

Date of last survey, Applicant.

Rating,

Warranted not to carry Petroleum Oil, or its products, under deck, except refined Oil in soldered cans in cases.

Warranted by the assured not to use any of the Guano Islands.

Warranted by the assured free from loss or expense arising from capture, seizure, or detention, or the consequences of any attempt thereat.

Warranted by the assured that the vessel be commanded by a captain holding a certificate from the American Shipmasters Association.

LONDON:
Printed by George E. Eyre and William Scottiswoode,
Printers to the Queen's most Excellent Majesty,
For Her Majesty's Stationery Office.

CORRESPONDENCE

BETWEEN

THE BOARD OF TRADE AND THE COMMITTEE OF LLOYDS.

Presented to both Houses of Parliament by Command of Her Majesty.

M 11022.

Board of Trade, Whitehall Gardens,
30th July 1875.

SIR,

REFERRING to previous correspondence on the subject of grain cargoes, and to the interview between Mr. Wylie and the President of this Board, I am directed by the Board of Trade to request the attention of the Committee to the enclosed clause which stands on the notice papers as an amendment to the Merchant Shipping Bill now before Parliament.

The Board of Trade would be glad to learn the opinion of the Committee on this clause, and especially whether without unnecessarily injuring the trade in corn it will effect the objects which the Committee have in view.

The Board of Trade would also be glad to know whether it is, in the opinion of the Committee, practicable to make and enforce in this country regulations which will insure the safety of ships loading grain abroad during the ensuing winter.

The Board would be glad to have an answer by to-morrow morning, if possible.

I have, &c.
T. H. FARRER.

The Secretary,
Lloyd's, E.C.

Mr. REED to move the following clause:

(*Cargo of Grain, &c.*)

No cargo consisting wholly or partly of any kind of grain, corn, rice, paddy, pulse, seeds, nuts, or nut kernels, shall be carried on board any British ship, unless the same shall be contained in bags, sacks, or barrels, or thoroughly secured from shifting by boards, bulkheads, or otherwise.

A British ship carrying cargo which consists wholly or partly of any such goods shipped in bulk shall not be deemed seaworthy.

The master of any British ship who shall knowingly allow any cargo or part of a cargo to be shipped therein for carriage contrary to the provisions of this section shall, for every such offence, incur a penalty not exceeding two hundred pounds.

SIR,

Lloyds, 30th July 1875.

IN reply to your letter of this date, I am directed to say that the Committee of Lloyds meeting only on Wednesday in each week I am not able to give you their opinion upon the question you propose quite officially, but I believe I may say that the opinion of my Committee is, that *no legislation on this side only will be of any effective service in stopping shipments of cargoes of grain in bulk*, but that action to be of any power must be taken at the *loading* port. They believe that only in this manner

[C.-1313]

an effective control over all shipments of grain cargoes can be fairly and generally enforced, and that any other legislation must affect only British shipping injuriously while the laws of the country of export would deal equally with ships of all nations.

They believe, too, that fines and dicta of unseaworthiness (which in reality may or may not exist) can either be evaded or would be so arbitrarily carried out that they would be intolerable.

I would venture to point out that unseaworthiness is a question of fact and legal proof, and that no Act of Parliament can make a ship unseaworthy if she is not so, or should be *held* to make her so if she be not proved so in reality, nor is it to be supposed that it will prevent underwriters from paying for the loss of a ship if they have covenanted to do so.

As to the special clauses brought under the notice of my Committee they appear so unreasonable that they scarcely need comment. It has never been a question of interfering with the cargo *partly loaded* with grain, because the great causes of danger do not in that case exist. I should have preferred not to go further into the special clauses marked for the opinion of the Committee, but upon the same authority with which I have already written I may perhaps say that my Committee believe that a hard and fast line of loading has been shown to be impracticable, and that compulsory classification of all ships in all trades is an arbitrary rule which ought not to be insisted upon. Some of the finest ships in the Merchant Service have never borne a classification.

I have, &c.

T. H. Farrer, Esq.,
Secretary, Board of Trade.

J. F. Ollard,
Asst. Sec., pro. Sec.

LONDON:
Printed by George E. Eyre and William Spottiswoode,
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For Her Majesty's Stationery Office.

COMMERCIAL. No. 16 (1875).

(GRAIN CARGOES.)

151

CORRESPONDENCE

BETWEEN THE

BOARD OF TRADE AND FOREIGN OFFICE

AND

COMMITTEE OF LLOYD'S

ON THE SUBJECT OF

GRAIN CARGOES.

Presented to the House of Lords by Command of Her Majesty.
1875.

LONDON:
PRINTED BY HARRISON AND SONS.

[C.—1353.] *Price* 1*d.*

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Correspondence between the Board of Trade and Foreign Office and Committee of Lloyd's on the subject of Grain Cargoes.

No. 1.

The Secretary of Lloyd's to Lord Tenterden.—(Received April 20.)

Sir, *Lloyd's, April* 19, 1875.

I AM directed by the Committee of Lloyd's to inform you that it has been reported to the Committee that measures for deepening the bar at Kertch have been instituted by the Government of His Majesty the Emperor of Russia, and that the works proceed only with great delays.

I am directed further to point out to you that in consequence of want of water on that bar considerable damage and loss is incurred by both ships and cargoes, and consequently much loss is sustained by merchants and underwriters interested in the trade of the Azov. I am, therefore, to request you to be good enough to bring these matters under the notice of the Earl of Derby, in order that his Lordship may allow such steps to be taken as he may deem advisable to draw the attention of the Russian Government to the necessity for the rapid completion of the works for deepening the bar at Kertch.

I am further directed by the Committee of Lloyd's to bring under your notice the great saving of life and property that would, without doubt, be effected by an adoption at the grain loading ports in the Black Sea of some regulations with reference to the stowage of grain cargoes similar to those now enforced at Montreal and also at New York. From the semi-fluid character of these cargoes great danger is experienced in heavy weather from their constant displacement by the motion of the vessel if not adequately secured. Even under the most favourable circumstances they always settle into a much smaller space than that which is originally occupied when they are first loaded, and this also has a tendency to render useless shifting boards and other safeguards, unless very carefully provided.

No less than five steamers from the Black Sea foundered during the months of November, December, and January, while a sixth was abandoned from the same cause but subsequently recovered. The number of lives lost on board these vessels can hardly be estimated at less than 140. It is further to be noted that one of these five, during the winter of 1873, brought a cargo of like quantity across the Atlantic in perfect safety through equally severe weather. Her captain attributed his safety upon this voyage to the fact of one-third of his cargo having been stowed in bags upon the top of the remaining portion in bulk, while, when coming lately from the Black Sea, this precaution was omitted, and the loss of twenty-eight lives would appear to have been the consequences. Even on so short a voyage as from Antwerp to London seven lives, as well as the ship and cargo, were lately lost from the shifting of a cargo of linseed on board a steamer called the "Princess." The Committee of Lloyd's believe that inquiries of all who are conversant with this subject will confirm the view they are now taking, and which has been most forcibly brought under their notice by the very marked effect upon the safety of steamers bringing grain from Montreal to New York, owing to the punctual enforcement of the regulations mentioned above since the disastrous winter of 1872-73.

In addition to the painful argument furnished by the loss of so many lives every winter from this cause, you will observe that the loss of so much property must have a tendency to raise both freights and premiums, and by this increase of the cost of importation tell against the welfare of the great Empire of Russia in competition with other grain exporting countries. It thus becomes greatly the interest of the Government of that country to enforce rules that have been found in practice so beneficial,

even if the lives directly affected thereby should be mainly those of our own countrymen.

I am, &c.
(Signed) H. M. HOZIER, *Secretary.*

No. 2.

Lord Tenterden to Mr. Farrer.

Sir, *Foreign Office, April* 24, 1875.

I AM directed by the Earl of Derby to transmit to you a letter from Lloyd's,* and I am to request that, in laying it before the Board of Trade, you will state that his Lordship has communicated with Her Majesty's Ambassador at St. Petersburg on that part which relates to the condition of the bar at Kertch; and that if the Board of Trade think that course advisable, he is prepared to make a further representation in regard to that part which refers to grain cargoes.

Lord Derby would, however, be glad to receive the opinion of the Lords of Trade as to the precise form in which any representation on this last point should be made; and I am to observe that this letter from Lloyd's does not contain full information with respect to the regulations stated to be in force at Montreal and New York.

I am, &c.
(Signed) TENTERDEN.

No. 3.

Lord Tenterden to the Secretary of Lloyd's.

Sir, *Foreign Office, April* 24, 1875.

I AM directed by the Earl of Derby to acknowledge the receipt of your letter of the 20th instant, and I am to state to you in reply, for the information of the Committee of Lloyd's, that the representations therein made relative to the condition of the bar at Kertch and grain cargoes from Russian ports in the Black Sea, are receiving his Lordship's attention.

I am, &c.
(Signed) TENTERDEN.

No. 4.

Mr. Farrer to Lord Tenterden.—(*Received July* 13.)

My Lord, *Board of Trade, Whitehall Gardens, July* 12, 1875.

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 24th April last, transmitting a letter from Lloyd's relating (1) to the condition of the bar at Kertch, and (2) to the need for some regulations for the stowage of grain cargoes at ports in the Black Sea similar to those that are in force at Montreal and New York.

The latter of these two subjects is, no doubt, one of very serious importance as regards the safety both of lives and property, but the Board of Trade hesitate to advise his Lordship to make a represention on the subject to the Russian Government for the following reasons:—

1. They have not yet succeeded in obtaining copies of the rules in force at Montreal and New York, and it is very doubtful whether rules made for one port would be applicable or advisable at another.

2. A dangerous precedent might be established if a foreign Government were invited to legislate or make regulations for British shipping. Such regulations might be injudicious in themselves, whilst their application by the foreign authorities might be unjust; and remonstrances against their abuse would lack force from their having been made at the request of Her Majesty's Government.

3. Any general regulations at a foreign port would affect ships of other nations, and any special regulations for British ships might act injuriously to British commerce.

* No. 1.

4. Under-writers and shipowners might do much to effect the desired object without Government interference.

Under these circumstances the Board are in communication with Lloyd's to see whether steps cannot be taken to secure the adoption of proper rules without applying for the compulsory interference of the Russian Government.

I have, &c.
(Signed) T. H. FARRER.

No. 5.

Lord Tenterden to the Secretary of Lloyd's.

Sir, *Foreign Office, July* 17, 1875.

WITH reference to the letter from this Office of the 24th of April last, I am directed by the Earl of Derby to state to you, for the information of the Committee of Lloyd's, that his Lordship has considered, in consultation with the Lords of Trade, the questions adverted to in your letter of the 20th of April, respecting the condition of the bar at Kertch, and the need for some regulations for the stowage of grain cargoes at ports in the Black Sea similar to those that are in force at Montreal and New York.

I am now to observe that the latter of these two subjects is, no doubt, one of very serious importance as regards the safety both of lives and property, but Lord Derby does not deem it advisable to make a representation on the subject to the Russian Government for the following reasons:—

1. This Office is not yet in possession of copies of the rules in force at Montreal and New York, and it is very doubtful whether rules made for one port would be applicable or advisable at another.

2. A dangerous precedent might be established if a foreign Government were invited to legislate or make regulations for British shipping. Such regulations might be injudicious in themselves, whilst their application by the foreign authorities might be unjust, and remonstrances against their abuse would lack force from the regulations having been made at the request of Her Majesty's Government.

3. Any general regulations at a foreign port would affect ships of other nations, and any special regulations for British ships might act injuriously to British commerce.

4. It appears to Lord Derby that under-writers and shipowners might do much to effect the desired object without Government interference.

I am, in conclusion, to state that Lord Derby understands that the Board of Trade are in communication with the Committee of Lloyd's, with a view to ascertain whether steps cannot be taken to secure the adoption of proper rules without applying for the compulsory interference of the Russian Government.

I am, &c.
(Signed) TENTERDEN.

No. 6.

The Secretary of Lloyd's to Lord Tenterden.—(Received July 22.)

My Lord, *Lloyd's, July* 21, 1875.

I AM directed by the Committee of Lloyd's to acknowledge with thanks the receipt of your letter of the 17th instant.

I have only to remark, in reply, that it was not the intention of the Committee of Lloyd's to suggest a special law for British vessels loading at Russian ports that was not applicable to those of other nations, but a universal regulation which might be applicable to vessels of all flags alike.

The paragraph 4 of your letter is that which the Committee of Lloyd's is most concerned to answer, and perhaps I may possibly place before your Lordship the opinion of the Committee by inclosing a copy of a letter which has been written to the Board of Trade in reply to the communication from that Department upon the same subject, alluded to in your Lordship's letter of the 17th instant.

I have, &c.
(Signed) H. M. HOZIER, *Secretary.*

Inclosure in No. 6.

The Secretary of Lloyd's to the Assistant Secretary to the Board of Trade.

Sir, *Lloyd's, July* 21, 1875.

I HAVE to acknowledge your letter of the 10th July (replying to mine of the 19th April addressed to the Foreign Office and referred to your Department) suggesting that instead of claiming the interference of the Russian Government to control the stowage of grain cargoes shipped from the Black Sea, the owners and underwriters should be the persons by whom a better state of loading should be enforced.

The Committee would probably not have gone further into this question had it not been for the concluding paragraph of your letter, desiring their opinion upon the practicability of their action conducing to a better system; and upon this subject they are glad to have an opportunity of saying a few words, as it seems to them that there is much misconception about it.

The province of underwriters is not to lead, but to follow, the course of trade; for the machinery by which commerce is carried on is independent of their control or consent; nor are the interests represented by the Committee really concerned in the matter, for whatever the risks of any special trade may be, proportionately to those risks is the payment for insurance ultimately regulated.

It is possible that the interesting letter from the Consul-General at New York of 24th June, 1875, sent here from your Department, may have lead to a belief that it is within the power of underwriters to regulate the loading of cargoes of the same description as those, the subject of this correspondence. But I beg to point out to you that the control the New York underwriters possess is limited to those ships the insurance of which is offered to their particular associated offices of the Board of Underwriters, while at Montreal, where Government interference prevails, the rules are absolute and general. Further, what may be possible by association in a limited area of business becomes impracticable when that area is greatly extended; and such a combination in England would simply result in transferring the market for insurance to other countries.

The Committee indeed entertain doubts whether such a power of control among underwriters (though apparently useful in the present instance) would always be for the advantage of commerce.

The Committee fearing to go at greater length into this question at this moment have intended to show very shortly that underwriters do not possess the power, and then that they have no direct interest in urging the point referred to in their letter of the 19th April, and that they were moved only by a desire to bring authority to bear on a custom of trade that led directly to lamentable loss of life and inevitable destruction of property.

They consider these subjects as directly coming under the legitimate interference of Governments, and that by them alone they can be effectively dealt with; and the Committee would be glad if you could decide to share these views, and return the letter to the Foreign Office backed with the influence of your opinion.

I am, &c.

(Signed) HENRY M. HOZIER, *Secretary.*

No. 7.

Lord Tenterden to the Secretary to Lloyd's.

Sir, *Foreign Office, July* 23, 1875.

I AM directed by the Earl of Derby to acknowledge the receipt of your letter of the 21st instant, containing further observations on the part of the Committee of Lloyd's with respect to the regulations for loading vessels at Russian ports.

I am, &c.

(Signed) TENTERDEN.

COMMERCIAL. No. 16 (1875).

(GRAIN CARGOES.)

CORRESPONDENCE between the Board of Trade and Foreign Office and the Committee of Lloyd's on the subject of Grain Cargoes.

Presented to the House of Lords by Command of Her Majesty. 1875.

LONDON:
PRINTED BY HARRISON AND SONS.

LANDGUARD COMMON.

RETURN to an Order of the Honourable The House of Commons, dated 16 February 1875;—*for*,

COPY "of REPORT of Sir *John Coode*, C.E., to the Board of Trade, dated the 26th day of May 1874."

Board of Trade, 17 February 1875. } G. C. BENTINCK.

REPORT of Sir *John Coode*, C.E., to the Board of Trade.

COAST LINE AT LANDGUARD COMMON,

2, Westminster Chambers,
Victoria-street, Westminster, S.W.,
26 May 1874.

Sir,

ACTING upon the instructions conveyed by Mr. Farrer's letter to me of 5th instant, I proceeded to Harwich on 14th, and was engaged on 15th and 16th in the examination of plans in the Royal Engineer Offices, both at Harwich and Languard, and in making a careful inspection, firstly, by passing from south to north across the central part of the common, noting the position and extent of the areas flooded by the high tides of December 1873 and March 1874; and secondly, by walking the whole extent of the foreshores from Bull Cliff, near Felixstowe, on the north-east, along Landguard East Beach, and thence around by the point and along the western face of the common, up to the ferry at the entrance of Walton Creek.

Captain Morgan, R.E., who is in charge of War Department works at Harwich and Landguard, accompanied me during my inspection, both on 15th and 16th, and has, at my request, since furnished me with a plan and certain levels of the foreshore near the site of the breach of 22nd November ultimo.

With regard to the condition of the foreshores, and the damage recently done, I found, proceeding in the order above stated, that from a point opposite the battery under Bull Cliff Martello Tower, near Felixstowe, the sea front of the common, for a length of about 1,800 yards, has been rather strengthened than weakened by the recent high tides, inasmuch as an additional layer of shingle and sand has been deposited on the surface of the land for a breadth of from 10 to 20 yards back from the high-water margin.

At about 350 yards to the south of the East Martello Tower (P) the sea margin of the common has been undercut for a length of about 30 yards.

Proceeding towards the south-west, there are no signs of recent damage until arriving within about 105 yards of the old rifle butts, which are situated about 450 yards to the north-east of Landguard Fort; here there is a very low place, and the margin of the common for a length of about 620 yards, from E to F on the annexed plan, has been more or less undercut and wasted by the action of the sea; at one of the lowest portions of this length, near F on plan, the high tides of the past winter have on two occasions gained access to the common.

From F to the jetty groyne at Landguard Point, the foreshore has been much strengthened of late by recent accumulations of shingle and sand, evidently due to the action of that work, and it is satisfactory to notice that

 these

these accumulations are in process of being materially strengthened by the growth of new and advancing lines of "bent-grass," which, in due time, may be expected to promote the formation of sand dunes, as in similar cases elsewhere.

Passing around Landguard Point and proceeding along the western face of the common, the first point worthy of notice is the damaged condition of the planked revetment at the back of the five southernmost groynes erected by the War Department opposite Landguard Fort, G on plan; this damaged revetment should be repaired, or rather re-constructed, in the course of the summer of this year.

The breastwork at the back of the groynes on the beach between the garden and boat-house north of Landguard Fort has been displaced, but I do not regard the repair of this as important as a matter of defence against the sea, inasmuch as there is a substantial bank in the rear, which, in its present state, is quite capable of preventing the sea from making any inroad upon the common at this point.

A short distance further to the north I found that the tide now has access to the low-lying part of the common by the old channel of Horse Shoe Creek, through a breach in the embankment, which it appears was constructed by the War Department about four years since, and I am informed, was outflanked by the sea getting in from the harbour at its northern extremity on the 22nd November last, but the breach through the embankment above referred to was not made until 20th March last, when the tide is stated to have been higher than has been known in this locality for about 30 years.

According to a mark made near the tide gauge on the jetty at Harwich, I find that high water of 20th March last was 16 feet 8 inches above the zero of the gauge, or approximating to an excess of 50 per cent. of the whole spring tide range. It was stated to me by Quartermaster Serjeant Symons, who is stationed at Landguard Fort, that the tide of 20th March overflowed the crest of the shingle between Landguard Fort and the mouth of Walton Creek to such an extent that the whole common was submerged, with the exception of only two or three high patches of comparatively small extent.

It will be seen by reference to the annexed Plan, which is compiled from an Ordnance Survey of 1864, that a tidal channel formerly existed at the point where the embankment was breached on 20th March last.

A little further northward a channel was formed through the shingle beach on 22nd November 1873; this appears to have been the new channel referred to in the petition forwarded by Colonel Tomline to the President of the Board of Trade, dated 6th December 1873. From information obtained in the locality I find that this was afterwards partially closed from natural causes, but was again re-opened and somewhat enlarged by the high tide of 17th December 1873, which flooded the low-lying portions of the common; it has now been again closed to a great extent, and without any artificial aid.

From this point to the entrance of Walton Creek the beach is sound and free from any channels or gullies, but the crest is so low for the whole distance of about a mile that it must always be liable to be overtopped by extraordinary tides.

With respect to the steps to be taken for the preservation of the coast line at Languard, proceeding in the same order as before, I would recommend—

1st. That at the point hereinbefore referred to as having been undercut at about 350 yards to the south of the East Martello Tower, about 30 lineal yards of stake-and-wattle work should be put down along the sea front, and in line with the margin of the common, north and south. The stakes to be of larch, generally about 9 feet long, driven 5 feet into the ground, at an inclination of 6 inches to a foot, and to stand about 4 feet above high water of ordinary spring tides; they should be about 4 inches diameter at the top or thick end, and placed at distances of 1 foot 6 inches apart in the clear, and closely and tightly wattled in between with long strong and tough black or white thorn bushes, the space between the back of the wattling and the land being filled in or strongly backed up with sand and bent grass, care being taken that the latter be dug up by the roots and roughly planted over the top, and over the surface of the landward slopes where the wattling may be above the level of the land at the back.

2nd. That

2nd. That a similar line of stake-and-wattle work should be put down along the sea frontage east of Landguard Barracks and Fort, from E to F on plan, about 620 yards in length.

3rd. That the planked revetment at the back of the southernmost groynes constructed by the War Department on the west side of Landguard Fort should be re-constructed; in so doing the piles should be driven to a batter or inclination of about 4½ inches to the foot.

4th. That across the channel at the site of the breach made in the War Department embankment to the north-west of the boat house, a new protection work should be constructed, in the position and direction indicated by a thick red line and lettered C D on the annexed plan. This work to consist of an embankment formed of stiff clay, well punned in with a small proportion of clean gravel, and faced with pile-and-plank work. The top of the embankment to be 5 feet above high water of ordinary spring tides, 4 feet 6 inches wide at top, and the back slope 1½ to 1 and both sodded. The base of the embankment to be carried well down into the foreshore, the sand and gravel being excavated for that purpose. The face of the pile-and-plank work to be battered to the extent of 4 inches to a foot, and secured by means of stay piles and braces.

A cast-iron pipe for draining the land water and soakage should be laid through the embankment, and extend about 120 feet from the piling towards low water, with a proper tide-flap at the outer end.

5th. That across the channel formed through the shingle beach on 22nd November 1873, a work similar in all respects to that last described, omitting the drain-pipe, should be constructed in the position indicated also by a red line, and marked A B on the plan.

Between this channel and the entrance to Walton Creek the beach is low, as I have already stated, and liable to be overtopped by extraordinary tides; the raising of this appears in my opinion to be a landowner's question. I do not consider that it would be expedient to incur the expense so long as the tide may be permitted to flow into and out from Walton Creek.

It was very satisfactory to find that the removal of shingle from the beach between Landguard Fort and Walton Creek has been stopped since January last, and it is to be hoped that this practice will not be permitted for the future.

The following is an estimate of the cost of the works I have herein recommended :—

	£.
Thirty yards of stake-and-wattle work and backing to same, on the sea front at 350 yards south of East Martello Tower - - - - - - - - - - - -	20
Six hundred and twenty yards, or thereabouts, of stake-and-wattle work and backing to same, on the sea front east of Landguard Barracks and Fort, E to F on plan -	450
Planked revetment at back of southernmost groynes on the harbour front, west of Landguard Fort, C on plan - -	280
Protection works across the breach through War Department embankment, and across channel formed through shingle beach on 22nd November 1873, from A to B and from C to D on plan - - - - - - - - -	820
	1,570
Contingencies, 10 per cent., say - - -	150
TOTAL - - - £.	1,720

With respect to the danger to be apprehended from the encroachments of the sea, if the eastern and western foreshores of Landguard Common be not protected by means of such works as I have recommended, there would be reason to apprehend that on the first occurrence of unusually high tides accompanied by strong gales from any point between S.E. (by south) to S.W., further and much

much more considerable damage would be done, and it would be far from improbable that a second channel might be cut through from the German Ocean to Harwich Harbour, isolating Landguard Fort, the lighthouse, and works at the Point, a state of things which I need scarcely say would prove seriously detrimental to all the interests concerned.

The works which I have recommended are of a simple and inexpensive character, but I believe they will be found as effectual as any that can be devised. It is quite possible that the stake-and-wattle work on the eastern foreshore may require to be extended hereafter, but according to the results of my inspection nothing more would seem to be necessary as a protection against the next winter.

I beg to return herewith the several papers received with Mr. Farrer's letter of 5th instant, and

I have, &c.

The Assistant Secretary,
Harbour Department, Board of Trade.

(signed) *Jno. Coode.*

PLAN OF PART OF LANGER COMMON, HARWICH,

To Accompany Sir John Coode's Report.
Dated 26th May 1874.

26 May 1874

LANDGUARD COMMON.

COPY of REPORT of Sir *John Coode*, C.E., to the Board of Trade, dated 26 May 1874.

(*Colonel Jervis.*)

Ordered, by The House of Commons, *to be Printed,*
18 *February* 1875.

[*Price 7d.*]

Under 1 *oz.*

LIGHT DUES.

RETURN to an Order of the Honourable The House of Commons, dated 7 June 1875;—*for*,

RETURN "showing the Total Amounts received for LIGHT DUES at PORTS in *England* and *Wales*, in the Year ending the 31st day of March 1875, from SHIPS of the undermentioned Classes:—

From Coasters;

From short Oversea (or Home) Ships, *i.e.*, trading between Ports in England or Wales and Ports between the Elbe and Brest (estimated by the Quarter ending the 30th day of June 1874);

From all other Oversea Ships."

[As furnished by the Corporation of TRINITY HOUSE of DEPTFORD STROND.]

Board of Trade, 14 June 1875.

T. H. FARRER.

RETURN showing the Total Amount received for LIGHT DUES at PORTS in *England* and *Wales*, in the Year ending the 31st day of March 1875, from Ships of the undermentioned Classes.

	£.	s.	d.
From Coasters	13,929	11	3
From short Oversea (or Home) Ships, *i.e.*, trading between Ports in England or Wales and Ports between the Elbe and Brest (estimated by the Quarter ending the 30th day of June 1874).	24,673	5	4
From all other Oversea Ships (estimated as above)	217,699	14	7
TOTAL COLLECTION from Oversea and Coasting Vessels at Ports in England and Wales, in the Year ending 31st March 1875 - £.	256,302	11	2

Trinity House, 9 June 1875.

(signed) *Robin Allen*, Secretary.

LIGHT DUES.

RETURN showing the Total Amounts Received for Light Dues at Ports in *England* and *Wales*, in the Year ending 31 March 1875, from Ships of the following Classes:—From Coasters; from short Oversea (or Home) Ships, *i.e.*, Trading between Ports in *England* or *Wales* and Ports between the *Elbe* and *Brest* (estimated by the Quarter ending 30 June 1874); and from all other Oversea Ships.

(*Mr. Murphy.*)

Ordered, by The House of Commons, *to be Printed*,
16 *June* 1875.

FURTHER PAPERS

RELATIVE TO A

PROPOSAL TO SUBSTITUTE GAS FOR OIL

AS

AN ILLUMINATING POWER

IN

LIGHTHOUSES.

Part III.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

1875.

[C.—1151.] *Price* 8*d.*

FURTHER PAPERS

RELATIVE TO

A PROPOSAL TO SUBSTITUTE GAS FOR OIL AS AN ILLUMINATING POWER IN LIGHTHOUSES.

REPORT as to the use of GAS for REVOLVING LIGHTS.—By D. and T. STEVENSON, Engineers to the NORTHERN LIGHTHOUSES BOARD.

A PROPOSAL, contained in papers* transmitted by the Board of Trade, to increase the period of darkness in revolving lights illuminated with gas by extinguishing the gas at every alternate flash, so that the light which gives a flash every 12 seconds, as at Rockabill in Ireland, should have its period altered to 24 seconds, and thus to effect a saving of one half of the gas required for illumination, was remitted to us for our opinion on the 2d of November last. After careful consideration, we reported that, "with such a combination of revolving lenses and periodic extinctions of the light, "we do not see how it would be possible to maintain the characteristics of the light "*uniform* in all azimuths, and therefore we are of opinion that the occasional obscura- "tion of the gas is not applicable for revolving lights."

In the papers of date 7th February 1871,† submitted for our further consideration, we observe it is stated that further experiments at Rockabill lighthouse showed that at some points a "short flash" was observed, which, however, could not be mistaken for the true flash, and was regarded as not of "practical importance." But even if this secondary or faint light, as seen at the points referred to, were unimportant, and might safely be disregarded, which we are not prepared to admit, the explanation does not appear to us to meet fully the difficulty we have started. There must necessarily, for example, in such a combination of revolving apparatus and periodic illumination, be points on the horizon where, when the revolving light has just reached the eye of the mariner, and is beginning to *wax* larger, it is suddenly eclipsed from his view before attaining its full strength, and at other points other anomalous appearances will present themselves. It is very difficult indeed to pronounce what would be the *practical* effect of such an arrangement as viewed from different azimuths, but we feel satisfied that it would not present an *uniform* appearance at every point in the horizon. One prominent object in lighthouse engineering is to present to the eye of the mariner the greatest possible *power* and *duration* of light with an *uniform* and *unmistakeable* characteristic appearance, and if a flash every 12 seconds be faster than is required as a distinguishing characteristic, the period between the flashes would most advantageously be lengthened by driving the machine at a reduced speed. In this way absolute uniformity of appearance would be obtained, while, by increasing the period of its visibility, the quality of the light would be improved, and the most favourable result secured for the mariner, a point which we think should take precedence of economy in the source of illumination. To drive the machine at high speed and give flashes of short duration at *lengthened* intervals is not an arrangement that we should recommend to be adopted.

Our opinion is further requested as to another proposal in connexion with the application of gas to revolving lights which, if we understand it aright, consists in extinguishing the light, say every alternate second, so as to produce *continuously* a series of one second flashes and one second eclipses. The effect of this on a revolving light would be, that instead, as at present, of the light coming gradually and steadily into view, attaining its full power and then declining, thus allowing the sailor to study its

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* See papers on this subject presented to Parliament by Command in 1871 [C. 282], page 27.

† Ibid, page 30.

position and take his bearings for some seconds (the length of time varying of course with the state of the weather), the light, if altered in the way proposed, would, during the short time it is in view, present the appearance of a succession of short flashes, or, as stated in the papers, the proposal "consists in causing the gas to produce while "each lens passes the eye three or four rapid flashes caused by the extinction and "re-ignition of the gas." Now the number of those flashes reaching the mariner's eye would obviously vary according to the state of the atmosphere, the weaker flashes given out, when the revolving light was gradually gaining or losing its strength, being visible only in clear weather, which we think would lead to embarrassment. Indeed, in a state of atmosphere which could only be penetrated by the strongest portion of the revolving light, it might so happen that the period of extinction occurred just as that portion of the light was passing the mariner's eye, and he might fail to pick up a light which, had it been an ordinary revolving light, he might possibly have seen and recognized as the light he was looking for.

Under these circumstances, if we have rightly understood the proposal to involve flashes varying in power, we feel constrained to report that we do not think it applicable for revolving sea lights of great range.

We have supposed that the "rapid flashes" proposed may be given every alternate second, and without entering upon any discussion of the subject, we consider it sufficient to suggest that this raises an important question as experiments made on the visibility of lights in rapid motion in 1836, by the late Mr. Allan Stevenson, led to the conclusion "that within certain limits the visibility of a light is proportionate to the "time during which the object is present to the eye."* And we may further state, that at the Harbour light at Ardrossan we introduced an intermittent gaslight, in which, for the sake of distinction, it was desirable to make the light two seconds visible and one second dark; but the period of darkness is in practice found to be too quick to produce the effect of a flashing light, and it is proposed to alter the period.

Edinburgh, 28th March 1871.

(Signed) D. and T. Stevenson.

This Report was sent by the Board of Trade for the Observations of Mr. Wigham, the late Commander Hawes, R.N. (Inspector of Irish Lights), and Professor Tyndall, LL.D. These gentlemen have offered the following Observations.

Capel Street, Dublin, 14th April 1871.

Messrs. Stevenson pronounce a very decided opinion against the use of gas for annular lenses for revolving lights. I presume that their opinion is based on their very large acquaintance with the *theory* of the construction of annular lenses, for they do not state that they have practically verified it by actual experiments. Notwithstanding their assertions I can with the utmost confidence state that the series of experiments with this particular form of light, made at the request, and under the superintendence, of Captain Hawes, R.N., the Inspector of Irish Lights, both before and since you sent me the report of Messrs. Stevenson, prove that the objections made by them *do not hold good in practice*. I have satisfied myself by the most careful personal observation that all the flashes in each group of flashes are equally visible, and that these flashes are more effective in arresting observation in thick weather than the simple revolution of annular lenses, and I am informed by nautical authorities that the duration of the series of flashes in each group is quite sufficient to enable a mariner to take the bearings of the light, while the striking peculiarity of the light makes it impossible for him to make any mistake as to its identity. I have also made several experiments to test the proportion of light transmitted by various sections of the annular lens, which fully confirm the views I have above expressed. It is not necessary for me to enter into detail respecting these experiments; I understand that Captain Hawes, R.N., will very fully describe them in the official reply to Messrs. Stevenson's observations, which he says he has been requested to furnish. Wishing to have my statements supported by the testimony of a scientific optician, I asked Mr. Howard Grubb, C.E., whose experience in the manufacture of lenses and optical apparatus is well known, to witness the experiments, and in confirmation of what I have myself asserted I append this Report. After the long correspondence which has taken place

* Notice of experiments regarding the visibility of lights in rapid motion, by Allan Stevenson, LL.B., F.R.S.E. Edinburgh New Philosophical Journal for April 1842.

with Messrs. Stevenson respecting the substitution of gas for oil for lighthouse purposes, I had hoped that they would have been convinced of the superiority of gas, which I think the papers printed by the Board of Trade fully prove. I therefore regret that they should again give their opinion against a further development of the advantages presented by the use of gas without having first acceded to my suggestion that they should themselves come over here and look into the matter, for it is especially necessary in gas investigations that practical experiments should be made with the particular appliances, burner, &c. most suitable for the required purpose before a correct conclusion can be arrived at. I am sure from the great ability these gentlemen possess, that had they done so they would have seen that their theories respecting this branch of the subject require some modification.

(Signed) JOHN R. WIGHAM.

DEAR SIR, Rathmines, Dublin, 13th April 1871.

IN compliance with your request, I have the pleasure to lay before you the result of my observations of your "Flashing Gaslights," made on two recent occasions on which I have had the opportunity of witnessing the experiments.

I have based the results arrived at principally from the observations made at the 10-mile range on Tuesday night.

The result of the experiments is, to the best of my judgment, exactly in accordance with what I had expected from consideration of the construction of the dioptric light, viz., that with the exception of the faint glimmerings seen at the beginning and end of each group of flashes, the apparent brilliancy of the light (flashing or not flashing) is practically constant, and such also, as far as I could gather, was the unanimous opinion of all who witnessed it; nor, indeed, could I conceive anyone who had witnessed it coming to a different conclusion.

I say "flashing or not flashing" for this reason. You may remember, I requested to have some of the experiments made on Tuesday evening without flashing the light; my reason for this was, that we might eliminate any error that could arise from unequal flashing (this process being at present effected by hand). In fact I sometimes imagined that I did see some little irregularity of this kind in the flashing, but on no occasion could I detect any decided point of maximum. It is, however, satisfactory to have tried experiments that eliminate any possible error of the kind.

The practical conclusion arrived at amounts in fact to this: that, (assuming minute revolutions and 1″ flashes) out of about eight flashes visible about six may be considered to be of the maximum brilliancy.

As regards the remark of the Messrs. Stevenson, "That within certain limits the visibility of the "light is proportionate to the time during which the object is present to the eye," it would have been more satisfactory if the Messrs. Stevenson had mentioned the "limits." I apprehend they will be found such as to have no bearing on the present subject.

I cannot close these remarks without bearing testimony to the effectiveness and very striking characteristics of the light experimented upon. During the flashing experiments I found I could turn myself round and direct my eyes to a point about 90° away from the direction of the light, and still could detect each flash perfectly distinctly, and this at 10 miles distant, on a night by no means very clear. In fact if this light were flashing, say due north, it could not fail to catch the eye of an observer directing his view to almost any part of the northern horizon from east to west, and when the full light of 108 jets was turned on the splendour of the light was such as to almost eclipse the Bailey beside it. This great increase of brilliancy I impute chiefly to the greater depth or thickness of flame, not to its increased size.

It seems to me that if any doubts can still be raised as to the effectiveness of the light involving new experiments, the desirability of having the experiments conducted in such a situation that both lenses and gas taps could be worked by automatic machinery is too obvious to need recommendation.

John R. Wigham, Esq. (Signed) HOWARD GRUBB, C.E., F.R.A.S.

Office of Irish Lights, Dublin,
13th April 1871.

Messrs. Stevenson's report is divided into two parts; viz.:—

Part 1st gives at length their objections to the small intermediate flash which is perceptible when the gas is economised, as described by Dr. Tyndall in his letter to the Board of Trade on the 7th of February 1871.* On this subject Dr. Tyndall has correctly quoted my opinion that no practical inconvenience will arise from this small intermediate light, which for all nautical purposes is unimportant, and would not be seen at any distance. A ship, when within its range, could in no way be led astray.

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* Papers on this subject presented to Parliament by Command in 1871 [C. 282], page 30.

I see nothing in Messrs. Stevenson's report to cause me to alter my opinion on this point, because I have formed it from actual personal observation. Messrs. Stevenson state that at other points other anomalous appearances will present themselves, but that "it is very difficult indeed to pronounce what would be the practical effect of "such an arrangement as viewed from different azimuths." I can only say as to this, that having steamed all round the lighthouse of Rockabill, I did not observe the "anomalous appearances" adverted to, but found the practical effect exactly as I have described it in my letter to Dr. Tyndall.

Part 2nd of Messrs. Stevenson's report refers to the new plan of groups of flashing lights recurring at certain intervals, and it is because I consider this subject of greater importance, that I do not now dwell further upon that referred to in the first part of their report.

As far as I can understand, their objections to this plan appear to be based mainly on the supposition that the flashes in each group of flashes will differ in intensity, and that consequently in foggy weather some of each group will be obscured, or that perhaps in consequence of the extinction of the gas at that particular moment, the brightest of the group might not be observed, and thus the mariner might be seriously misled. Now in this I think that Messrs. Stevenson labour under an entire misapprehension, for we have always found the flashes to be of uniform intensity, as far as experiments made without machinery would permit us to judge. It is true that we always find a small light preceding both the flashes and the eclipses, but this is not to be in any way confounded with the flashes themselves.

Anxious, however, very carefully further to examine this point, I arranged within the last few days with Mr. Wigham, that two sets of experiments should be made to test the correctness of Messrs. Stevenson's opinions. These experiments have been to me of the most satisfactory kind. At the end of this report I append the particulars, and I am compelled to say that the results obtained do not enable me to corroborate the opinion of Messrs. Stevenson; on the contrary, the observations which were made led me to the conclusion that their objections, which appear to be based upon theory, would not be found to be borne out in actual practice; for example:—On the evening of the 8th instant we had an exceedingly favourable combination of circumstances by which we were enabled practically to determine the effect of fog upon these flashing lights. When we reached the point of observation near Salt-Hill Railway Station, the ordinary fixed light at the Bailey Lighthouse was barely discernible through the thick fog which hung over the sea, but on ascending the steps leading to the bridge which at that point crosses the railway (an elevation of about 70 or 80 feet) the Bailey Light shone out with its ordinary brilliancy. We therefore divided ourselves into two parties, one remaining at the sea shore and the other at the higher level. According as the groups of flashes were visible at the upper level the observers there required the party at the lower level to shout out the number of flashes which were visible to them; this was done many times, and the number of flashes thus reported was exactly the same as observed at the upper level. Of course, owing to the fog, all the flashes visible from the sea shore were feeble, but the point was clearly established that *as many* of them were visible through the fog as were visible through the clear atmosphere.

A striking illustration during this experiment was afforded to those at the sea shore of the value of this plan of rapid flashes in catching the eye, and also the superiority of their light to that of the ordinary fixed light, for once or twice the latter became completely obscured, and its actual position was only found by the recurrence of the flashes.

On the 11th instant I thought it advisable to take my station at Stepaside, about 10 miles distant from the Bailey lighthouse, in order to observe whether at that greater range the flashes would produce the same effect as at Salt-Hill.

It was the unanimous opinion of all present that for all practical purposes the flashes were of equal intensity. The experiments on this evening fully confirmed those made on the previous occasion, and I am settled in my conviction that the group of flashes, say of five or six every minute, is without doubt the most unmistakeably characteristic sea light I have ever seen.

Besides these experiments several interesting observations of the effect of increasing the power of the burner used with the lens were made. The light thus produced was exceedingly bright, and I feel confident that when the matter is pursued further this portion of the subject also will be found to lead to useful results. I look upon Rockabill as one of our model stations, and the introduction of gas there would have this further advantage, that experiments of a thoroughly practical character for the

purpose of ascertaining what gas can really be made to do in connexion with annular lenses, either with rapid flashes or otherwise, can be better performed there than in temporary apparatus which is worked by hand instead of machinery. I would, therefore, again advise that gas should be at once applied to Rockabill in order to give to that establishment the economical advantage to be derived from its use, and also that when Dr. Tyndall shall arrive further to investigate these matters, gas may be on the spot available for his use in making such experiments as he may deem thoroughly satisfactory and conclusive.

PROGRAMME of EXPERIMENTS referred to in this Report.

No. 1.

Date.	No.	Power.	Revolution.	Flashes.	From where.	
					Shewn.	Observed.
Saturday 8th April 1871	1	Full	-	-	Bailey lighthouse	Salt-Hill Station, Kingstown Railway.
	2	Ordinary	-	-	Do.	Do.
	3	Do.	None fixed	None fixed	Experimental house at Howth Bailey.	Do.
	4	Do.	1 minute	1 second	Do.	Do.
	5	Do.	Do.	Do.	Do.	Do.
	6	Do.	Do.	Do.	Do.	Do.
	7	Do.	½ minute	Do.	Do.	Do.
	8	Do.	Do.	Do.	Do.	Do.
	9	Do.	Do.	Do.	Do.	Do.
	10	Do.	1 minute	Do.	Do.	Do.
	11	Do.	Do.	Do.	Do.	Do.
	12	Do.	Do.	Do.	Do.	Do.
	13	Do.	Do.	Do.	Do.	Do.
	14	Do.	Do.	Do.	Do.	Do.
	15	Do.	Do.	2 seconds	Do.	Do.
		Out.	—	—	—	—

Mem.—The above experiments were witnessed also at Foxrock, about eight miles distant, and Stepaside, about 10 miles distant.

No. 2.

Date.	No.	Power.	Revolution.	Flashes.	From where	
					Shewn.	Observed.
Tuesday 11th April 1871.	1	Ordinary	1 minute	1 second	Experimental house, Howth Bailey.	Stepaside, foot of Three Rock mountain.
	2	Do.	½ minute	Do.	Do.	Do.
	3	Full	Do.	Do.	Do.	Do.
	4	Do.	1 minute	Do.	Do.	Do.
	5	Ordinary	Do.	Do.	Do.	Do.
	6	Do.	Do.	None	Do.	Do.
	7	Do.	½ minute	None	Do.	Do.
	8	Full	Do.	None	Do.	Do.
	9	Do.	1 minute	None	Do.	Do.
	10	Do.	None	1 second	Do.	Do.
	11	Ordinary	Do.	Do.	Do.	Do.
	12	Do.	Do.	Very rapid	Do.	Do.
	13	Do.	2 minutes	Do.	Do.	Do.
		Out.	—	—	—	—

These experiments were also witnessed from Foxrock and Salt-Hill station.

(Signed) E. W. HAWES,
Inspector of Lights.

SIR, 28th April 1871.

I HAVE read the report of the Messrs. Stevenson, which you did me the honour of sending to me on the 3rd of this month.

From the earlier reports of the Messrs. Stevenson it could not be inferred that they considered it in the least degree likely that gas would ever be advantageously employed for lighthouse purposes.

It is, however, an undoubted fact that notwithstanding the unfavourable opinion expressed by the Messrs. Stevenson, the applicability of gas to lighthouse illumination has been reduced to demonstration in Ireland.

What is now contemplated on the part of those to whose skill and enterprise we owe this result, is the examination of the question whether gas is, or is not, applicable to *revolving lights*.

Considering the importance of the subject, and its possible issues, I do not hesitate to recommend that arrangements be made at Rockabill which shall permit me, when I go to Ireland, to come to a definite conclusion as to the point in question.

Apart from the advantages already proved to exist, I think it highly desirable, when a solid prospect of advance presents itself, and where no extravagant outlay is demanded, to stimulate the inventiveness of lighthouse engineers generally, by the encouragement of experiments on the use of gas in Ireland.

I may say that there is no idea, qualification, or objection contained in the report of the Messrs. Stevenson that had not already passed through my mind. What they urge shall have due weight given to it. But the discussion of this new mode of dealing with lighthouse flashes, which it was my object to excite when I mentioned it incidentally in a report on a substantially different question, has only confirmed my belief in the necessity of further experiment.

(Signed) JOHN TYNDALL.

The Assistant Secretary,
Harbour Department,
Board of Trade.

MEMORANDUM as to the foregoing REPORTS of April 1871, on GAS ILLUMINATION, by D. and T. STEVENSON, Engineers to the NORTHERN LIGHTHOUSES BOARD.

WE have considered the further papers on the substitution of gas for oil in lighthouse illumination, consisting of a report by Mr. Wigham of 14th April,* by Commander Hawes of 13th April,† and by Professor Tyndall of 28th April.‡

As further experiments are contemplated by Professor Tyndall it does not appear to us to be necessary to offer any remarks on the papers referred to. But we should esteem it a favour to be allowed to correct a misconception which seems to have crept into the discussion and is expressed, unintentionally no doubt, in Professor Tyndall's Report, in which he says, "from the earlier reports of the Messrs. Stevenson it could "not be inferred that they considered it in the least degree likely that gas would ever "be advantageously employed for lighthouse purposes. It is, however, an undoubted "fact that notwithstanding the unfavourable opinion expressed by the Messrs. Stevenson, "the applicability of gas to lighthouse illumination has been reduced to demonstration "in Ireland." This statement is not borne out either by our *practice* or *reports*. We have employed gas in lighthouse illumination, at least since 1849, in situations where gasworks existed, and where it could be introduced with convenience and economy. All that we have reported as to the use of gas in the Northern Lighthouse stations is, that our experiments did not show any notable superiority of the gas over the mechanical oil lamps employed in the service, and that, on account chiefly of expense of carriage of materials and the additional attendance and rate of wages, the cost of gas in the Northern Lighthouses would exceed that of oil. Again, in reporting on revolving lights, we have never urged an objection to the use of gas in their illumination, but stated our opinion, "that the proposed *occasional obscuration* of the gas is not applicable "for revolving lights." This objection of course applies to light produced from any source, provided the proposed "*periodic obscurations*" were introduced in revolving lights. We have in none of our reports expressed any opinion unfavourable to the use of gas in situations where it can be shown to afford as powerful a light as that of oil at

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* Ante, p. 4. † Ante, p. 5. ‡ Ante, p. 8.

a cheaper cost, and to avoid misunderstanding we think it necessary to submit this explanatory statement

Edinburgh, 14th June 1871. (Signed) D. and T. STEVENSON.

The following further REPORTS from PROFESSOR TYNDALL, F.R.S., upon the applicability of GAS to REVOLVING LIGHTS have been received by the BOARD OF TRADE.

Kingstown, Ireland,
29th June 1871.

SIR,

I BEG to inform you that on the evening of Monday the 26th I conducted a series of observations on the new form of light proposed by Mr. Wigham and Captain Hawes.

In a shed at Howth Baily and at some distance below the fixed light an annular lens was placed; the lens rested on wheels which moved along a circular rail, and by this motion the action of an ordinary revolving apparatus was imitated.

The lamp was placed at the centre of the circle formed by the rail.

The station of observation was on Kingstown Pier, about five miles distant from the lens at Howth Baily.

When the observations began the ordinary 28-jet burner was already shining from the fixed apparatus above. On igniting a similar 28-jet burner below, the vast superiority of the light through the annular lens over the fixed light was immediately demonstrated. This of course might be anticipated from the construction of the lens, which squeezes the beam together in *all* directions instead of in a vertical direction only, as in the fixed apparatus.

A burner of 108 jets in the fixed apparatus produced, at the distance mentioned, an effect sensibly equal to that of the 28-jet burner in the annular lens.

Under ordinary circumstances, as the lens passes in front of the observer, the beam is carried along with it, the edge of the beam finally passing the observer, and leaving him in darkness until the arrival of the next succeeding beam.

In the method proposed by Mr. Wigham and Captain Hawes the beam, in passing the observer, is divided into a series of distinct flashes. The use of gas renders this easy of accomplishment. It is only necessary to open and close a cock at the proper intervals. When the cock is closed the flame is sensibly extinguished, a small by-way only supporting a flame so minute as entirely to escape observation from a little distance; when the cock is open the full flame flashes forth.

Several series of observations were made in which various angular velocities were imparted to the annular lens. The motion was in the first series so regulated as to correspond to a series of revolving panels succeeding each other at intervals of a minute. During each passage of the beam 10 to 12 flashes impinged upon the eye of the observer.

It will be remembered that the motion of the lens and the turning on and off of the cock, being regulated by the hand, strict mechanical uniformity was not to be expected.

Other series were conducted in which the velocity of rotation corresponded to that of a revolving apparatus with panels succeeding each other at intervals of three quarters of a minute, half a minute, and a quarter of a minute respectively.

The conclusion arrived at from these experiments is that the proposed method promises to furnish a light of remarkable power and individuality. The total quantity of light that reaches the observer's eye by the method of flashing is probably not much more than half of that which reaches it during the passage of the unbroken beam; but the division of the beam into a succession of powerful shocks to the retina is, perhaps, more calculated to arouse the attention of the mariner than the passage of the steady beam itself.

In other words, by reducing, in accordance with the ingenious proposal of Mr. Wigham and Captain Hawes, the quantity of gas by nearly one half we rather improve than prejudice the character of the light as a signal.

The flashes observed were of sensibly uniform intensity, and they vanished with great rapidity towards the limit of the beam.

I assured myself by actual trial that there was no difficulty whatever in taking the bearings of the flashing light.

It may be worth remarking that the effect of the flashing light is heightend by the

fact that during the interval of darkness between every two flashes the eye, which soon becomes partially paralysed by a continuous light, recovers its sensibility, and is thereby rendered more capable of appreciating the succeeding shock.

On the evening of the 27th fresh observations were conducted from the same point. On this evening arrangements were made for a steady advance in the number of jets both above and below. In the fixed light, for example, a 28-jet burner was in action when a 28-jet burner was in the focus of the annular lens; a 48-jet burner was in the fixed apparatus when a 48-jet burner was in the focus of the annular lens; and so of the other burners up to the largest, which embraces 108 jets. As might be expected the advantage derived from the augmentation of the burners was greatest in the fixed apparatus.

The observations of the 27th confirmed those of the 26th as to the marked efficiency and individuality of the flashing light.

To give this light a fair trial, and to give practical seamen an opportunity of testing its value, it is necessary that it should be exhibited in an actual revolving apparatus. The lighthouse of Rockabill is at hand, which offers every facility for the extension and completion of the observations.

The Messrs. Edmundson, I am informed, are willing to erect at Rockabill the works necessray for the observations, and to remove them in case of disapproval, for a sum of 100*l*. In view of the results likely to flow from it I do not hesitate to recommend to the Board of Trade that this proposal be accepted.

And I would also recommend that the sanction of the Board be given sufficiently early to permit of the erection of the works before the end of August, when I propose to return to Ireland with the view of presenting to the Board a concluding report on this important subject.

It is to be remarked, finally, that, even if the system of flashing should not be adopted, the gas-flame is more than competent to fulfil all the purposes of the oil-flame.

Additional Remarks.—I think it not unlikely that in foggy weather some advantage will be gained from the intermittent atmospheric glow corresponding to the intermittent ignition of the light. The rise and fall of this glow were very marked on the evening of the 27th when a rather thick haze swathed Howth Baily.

July 5th 1871.

I have, &c.

Cecil Trevor, Esq.,
Harbour Department,
Board of Trade.

(Signed) JOHN TYNDALL.

Royal Institution,
18th September 1871.

SIR,

Subsequently to my reports on the application of gas to fixed lights,* as illustrated at Howth Baily, the Commissioners of Irish Lights applied to the Board of Trade for the means of testing the applicability of gas to revolving lights. The proposed experiments involved the purchase and suitable mounting of an annular lens, and in view of the results already obtained in Ireland I did not hesitate to recommend to the Board of Trade that the sum needed for this important object should be placed at the disposal of the Commissioners.

The lens was accordingly purchased and mounted, the preliminary experiments were contrived and executed, and immediately before my summer vacation this year I went to Ireland to witness and to report upon the results. These were so far satisfactory as to warrant the further recommendation that the experiments should be rendered practical and demonstrative by having them executed in a lighthouse, instead of in a temporary shed, where motion by the hand had been made to supply the place of machinery. Rockabill, being less than two hours steam-distance from Kingstown Harbour, was the lighthouse chosen for the experiments.

The recommendation being acceded to by the Board of Trade, during the summer months the necessary gasworks were erected on the isolated rock on which the lighthouse stands, such trifling additions being made to the revolving apparatus as would place the action of the light altogether under the control of mechanism.

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* *See* Papers on this subject presented to Parliament by command in 1871 [C. 282.]

Having been informed a short time ago of the completion of the work I again visited Ireland, and I have now the honour to render to the Board of Trade an account of observations made there on the nights of the 11th, 12th, and 13th of September respectively.

Rockabill has been hitherto lighted by the four-wick Trinity lamp, burning oil of Colza. The revolving apparatus, as stated in a former report, performs a complete rotation in 96 seconds; and as during this time eight lenticular panels pass before the eye of an observer, each panel sending forth its beam, it follows that the time-interval between the arrival of the axes of two successive beams is 12 seconds.

It will moreover be remembered that the gas burners hitherto employed are of five different powers. The first burner has a diameter of $3\frac{3}{4}$ inches and embraces 28 distinct jets; the second a diameter of $5\frac{1}{2}$ inches and 48 jets; the third a diameter of $7\frac{1}{2}$ inches and 68 jets; the fourth a diameter of $9\frac{1}{4}$ inches and 88 jets; the fifth a diameter of $10\frac{1}{2}$ inches and 108 jets; the diameter of the four-wick Trinity burner is $3\frac{11}{16}$ inches, being practically the same as that of the 28-jet gas burner.

On the evening of the 11th we steamed from Kingstown in the "Princess Alexandra" passed Howth Baily, and keeping the island of Lambay between us and the shore attained a point equidistant from Howth Baily and Rockabill, and $9\frac{1}{2}$ miles from each. The stars were visible, but the ocean was hugged by a thickish haze which rendered the lights at both stations much dimmer than they would have appeared had the weather been clear.

Up to 10.55 p.m. the customary oil lamp had been permitted to burn at Rockabill; at this hour, and in accordance with a pre-arranged programme, the oil lamp was removed and the 28-jet burner put in its place. A distinct augmentation of the light announced the introduction of the gas.

At 11.10 p.m. 20 jets were added to the burner (a few seconds only being necessary for this change), thus raising the light to 48 jets. A still further augmentation of the light was observed.

A point of considerable importance may be noted here. As before stated the beams succeed each other at Rockabill in intervals of 12 seconds. With the oil-lamp, and with the 28-jet burner, this rapid rotation gives to each beam almost the character of a flash which quickly passes from the eye of the mariner. But the augmentation of the diameter of the burner, by widening the beam, materially affected its duration. The dark sectors were in fact diminished, and the luminous sectors increased in angular width, so that besides the augmentation of its light the beam continued to act for a longer period upon the observer's eye.

At 11.20 p.m. the 68-jet burner was ignited; the duration of the beam was still further increased; the light was perceptibly so, though not to a very striking extent.

At 11.25 the 88-jet burner was ignited, and at 11.30 the 108-jet burner. The duration of the beam was still further augmented in these cases, being sensibly proportional to the width of the burner; but the brilliancy of the beam was not apparently increased.

Remarks.—Supposing no alteration whatever to be made in the mechanism, or in the time of rotation, hitherto existing at Rockabill, we may draw in passing two practical conclusions from the foregoing observations.

1. That by substituting for the four-wick oil-lamp a gas burner of practically the same size we obtain a better light.

2. That by the substitution of a gas burner of higher power the light is not only still further augmented, but the duration of each particular beam is increased. Every mariner would, I doubt not, regard this increase of duration as an important improvement of the light.

By a former investigation it was shown that as regards Ireland the 28-jet burner is cheaper, while the 48-jet burner is dearer than the four-wick oil lamp. Hence by the introduction of the former at Rockabill we should gain both in economy and efficiency; by the substitution of the latter we should gain considerably in efficiency but at an increased expense.

The above *remarks* are introduced at this place with the view of connecting them more closely with the data on which they are based, But the observations on the night of the 11th did not end here. At 11.35 the ordinary oil lamp was again lighted and permitted to burn till 12.20. At 12.20 the 28-jet burner was ignited, when the superiority already recorded was once more observed.

The time of rotation of the revolving apparatus was now altered. Permitting the weight which moves the mechanism to remain unchanged, by a simple modification of the wheelwork the interval between two successive beams was augmented from 12

seconds to a minute, the duration of each beam being augmented in the same proportion. But instead of being permitted to pass steadily over the observer, each beam, by a simple mechanical arrangement which caused the alternate extinction and re-ignition of the gas, was converted into a series of flashes, following each other at intervals of one second. I thought this succession too rapid—in fact tantalising to the eye.

At 12.35 the 48-jet burner was introduced, its beams being cut up in the same manner. As might be expected from the augmented breadth of the burner, and consequent widening of the beams, the number of flashes yielded by each beam was increased, but, as in the former case, the succession was, in my opinion, too rapid to be effectual.

At 12.45 the 68-jet burner was ignited; and here the breadth of the beam was such as to admit of an interval of two seconds instead of one between every two successive flashes. The change was a marked improvement, these new flashes being distinct and powerful.

The same remark applies to the 88-jet and the 108-jet burners; the number of flashes yielded by the beam augmenting as the diameter of the burner from which it issued increased.

All these observations were made from a fixed position. At 1.10 a.m. the 28-jet burner being ignited a series of observations similar to those referred to and explained in my report of the 7th February 1871* was commenced. The method of observation it may be remembered involves the extinction of the gas as each alternate panel passes in front of the observer's eye. The interval between two flashes is thereby doubled, the quantity of gas consumed being reduced to one-half. The observed action was such as might be inferred from *a priori* considerations. The flashes succeeded each other in accurate order with an interval of 24 seconds. We steamed over a considerable arc round the lighthouse, and from every position occupied by the vessel the same steady performance of the light was observed.

But though the interval of 24 seconds is a short one, the passage of the beam was in this case so rapid that the saving of the gas would be accompanied by a too great deterioration of the light. In the light as it has hitherto existed at Rockabill the quickness of succession has atoned for the shortness of duration, and I should not therefore, for the sake of saving half the gas, be disposed to recommend the introduction of this method of alternate darkening at Rockabill.

But if, while the period of rotation remained unaltered, the duration of the flash could be materially increased, then, doubtless, the method of extinguishing the gas as each alternate panel passes the observer could be made to yield an excellent light. With the 68 jet burner, for example, a much more effective light than that now exhibited at Rockabill might, I doubt not, be obtained.†

On this and the subsequent evening I had the great pleasure of being accompanied by Sir Leopold M'Clintock, and on both occasions took advantage of his experience in verifying my conclusions in regard to the power and the fitness of the lights.

A brief recapitulation will be useful here. On the night of the 11th the apparatus at Rockabill was first permitted to revolve at its ordinary rate, the action of its customary oil-light being first observed, and subsequently to this the action of five different gas-burners of gradually augmenting power. The speed of revolution was then reduced so as to cause the axes of the rotating beams to succeed each other at intervals of one minute; but instead of allowing the beams to pass, as in the first experiments, steadily and unbroken before the observer's eye, they were resolved into a series of flashes by the regulated extinction and ignition of the gas. With the smaller burners the interval from flash to flash was one second, and this was found too rapid; the beam lost power as a signal light by this division. With the larger burners,

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* *See* Papers on this subject, presented to Parliament by command in 1871 [C. 282.], page 30.

† The adoption of the method of alternate darkening would permit of the employment of a powerful burner at a moderate cost. A burner of 56-jets applied in this way would consume only the same amount of gas as one of 28-jets applied in the ordinary way. Thus, by using the light for only half the time, we should be enabled, without any additional expense, materially to exalt its power. This conversion of *time* into *power* is only possible with gas.

however, the period of succession was augmented to two seconds, and the flashes are here reported as "distinct and powerful." Observations were also carried out in which the gas was extinguished as each alternate panel of the revolving apparatus passed in front of the observer's eye.

But besides the period of one minute from flash to flash, the wheel-work of Rockabill permitted of a period of 45 seconds. Partly for the purpose of control and partly for the sake of comparison, I wished to witness the effect of this period also. It was likewise desirable to compare, in each case, the steady and unbroken beam with the flashing beam; it was also thought worth while to change the over-rapid period of one second for a period of two seconds in the case of the smaller burners. Finally, I desired, before commencing observations on the 12th to assure myself that the oil-lamp at Rockabill yielded a proper flame. About 10 P.M. therefore an attempt was made to land upon the rock, but the surf and darkness defeated me. The following programme was subsequently carried out, the place of observation being about 5 miles distant from Rockabill.

Up to	11. 0	P.M.	oil-lamp; 45 seconds interval.
At	11. 5	,,	28-jet burner; steady.
,,	11.10	,,	28-jet burner; flashing.
,,	11.15	,,	48-jet burner; steady.
,,	11.20	,,	48-jet burner; flashing.
,,	11.25	,,	68-jet burner; steady.
,,	11.30	,,	68-jet burner; flashing.

The steady beams were here very fine, and unless *distinction* were of paramount importance I should be loth, especially as regards the smaller burners, to change them for the flashing beams.

At 11.35 p.m. we changed back to the 48-jet burner and to the old period of succession, namely 12 seconds, when a new series of observations, according to the method of extinction for every alternate panel, was carried out.

In the early part of Tuesday I had landed on Rockabill and inspected the apparatus. The oil-lamp employed for the experiments was that always used in the lighthouse. The pipe through which the wick was fed appearing rather narrow I thought it desirable to make a third series of experiments with a lamp which offered a freer passage to the oil. Such a lamp was found at Howth Baily, and on the Wednesday we steamed to Rockabill sufficiently early to set this lamp in full action before sunset. At 6 p.m. I inspected the lamp. It seemed to me that I had seen better flames in the experimental room of the Trinity House; but I have no reason to doubt the assurance both of the light-keeper and of Mr. Fitzsimon, foreman to the Inspector of Irish Lights, that the flame then exhibited was of the full average power employed in Ireland; at all events the oil-lamp was nursed up to its maximum strength. Having seen it in full action we steamed away to a distance of $4\frac{1}{2}$ miles and observed the lights from this position.

At 7.30 we passed from the oil-lamp to the 28-jet burner and found, as before, a marked augmentation of the light. Owing to the quickness of rotation, however, (the ordinary rate at Rockabill,) the beams, though brilliant while they lasted, passed rapidly over the observer's eye.

At 7.45 changed to the 48-jet burner. As before, the duration of each beam was found to be sensibly increased: in every respect indeed the light was a decided improvement on the last.

At 7.50, 68-jet burner. The duration of the beam was still further augmented, and much more easy to be picked up by the mariner than the rapidly vanishing beams of the smallest light.

Up to this point the beams succeeded each other at intervals of 12 seconds, it being understood that the interval is reckoned from centre to centre of the beams. The time elapsing between the vanishing of one beam and the appearing of the next was *less* than 12 seconds, the interval of darkness diminishing and that of light augmenting as the diameter of the burner increased.

At 8 p.m. the rate of revolution was changed so as to permit the beams to succeed each other at intervals of a minute. Its previous performance caused me to confine my attention to the 68-jet burner, each beam of which, at the changed rate of rotation, occupied 16 seconds in passing the eye. The strength of the beam during this interval appeared sensibly uniform. It rose rapidly to a maximum after its first appearance, and on disappearing fell as rapidly to a minimum.

By the action of the machinery, this beam was converted into a flashing light, the time from flash-centre to flash-centre being 2 seconds. There were therefore 8 full

flashes sent forth during every passage of the beam. The arrival of the full flashes was heralded and their disappearance was followed by a smaller flash. "*A powerful and indeed splendid effect*" are the words employed in my notes to describe this light. An interval of a minute between the beams seems to be the most suitable for flashes of this character.

When the 28-jet gas burner was employed with the same rate of rotation the number of flashes sank to 4. This result might have been predicted. The width of the 28-jet burner being exactly half that of the 68-jet one, the number of flashes from the former ought to be only half that from the latter.

Were its light fully invoked the 68-jet burner would be an expensive one, but by converting the beams into flashes the quantity of gas is reduced to little more than that consumed by 32 jets burning in the ordinary way. The cost of the 68-jet burner, thus applied, would probably not be more than that of the four-wick lamp hitherto at work at Rockabill.

Conclusion.—Weighing the observations here described, and others embodied in former reports, I think I am justified in recommending to the Board of Trade *that the gasworks recently erected at Rockabill be retained there, and that henceforth gas, instead of oil, be burned in the Lighthouse.*

This recommendation is fortified by the consideration, that in reference of the future of gas in lighthouses it is highly important to have in the neighbourhood of Dublin both a fixed light and a revolving light where experiments on these respective modes of illumination may at all times be carried on. Such experiments would furnish sure guidance as to the best form of apparatus for other stations.

And should it be thought desirable to give a revolving light so distinctive a character as to render it perfectly unmistakeable "the group flashing gas-light," as its inventor Mr. Wigham calls it, secures this end. I have not been called upon to offer any recommendation as to its adoption, and would therefore merely refer to it as a light of unrivalled individuality, of great power, and, in Ireland at least, of moderate cost.*

During my recent visit I also made experiments on the flashing of the fixed light at Howth Baily. The results assure me that with gas as a source of illumination an amount of variableness, and consequent distinctiveness, is attainable which is not attainable with any kind of oil. It would, I think, be easy to give to every lighthouse supplied by gas so marked a character that a mariner on nearing the light should know, with infallible certainty, its name. As stated in a former report, I look, in great part, to the "flexibility" with which gas lends itself to the purposes of a signal light for its future usefulness. It may be beaten in point of cheapness by the mineral oils now coming into use; (that is still to be proved,) but in point of handiness, distinctiveness, and power of variability to meet the changes of the weather, it will maintain its superiority over all oils. I therefore respectfully submit to the Board of Trade, that, while withholding all countenance from extravagant or fanciful experiments, *it will be wise to encourage, as hitherto, the gradual, economical, and consequent healthy expansion of the system of gas illumination in Ireland.*

I am unwilling to close this report without reminding the Board of Irish Lights that our knowledge of the comparative powers of the larger and smaller burners, as regards the penetration of fogs, is not so accurate and complete as it might be. It is highly desirable that further experiments should be made on this point.

I have, &c.,
(Signed) JOHN TYNDALL.

Cecil Trevor, Esq. &c. &c.
Harbour Department Board of Trade.

The BOARD OF TRADE, upon consideration of this Report, gave to the Commissioners of Irish Lights the requisite sanction for the substitution of gas for oil at the ROCKABILL lighthouse, provided the existing character of the light is not varied.

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* It might be tried in the next new lighthouse, and thus tested without any disturbance of existing lights.

The following Papers refer to a Proposal to use Gas for the purpose of Increasing the Effectiveness of Fog Signals.

Sir, 33 to 36, Capel Street, Dublin, 7th December 1871.

On the occasion of Dr. Tyndall's last visit, the superiority of guns as fog signals happening to be the subject of conversation, I stated that I thought that the gas which was being introduced into lighthouses might be made available, and that I could construct a gas gun which would be found an effective fog signal. I have since given the matter much consideration, and having made many experiments (in which I was assisted by my nephew Mr. J. W. Edmondson, C.E.), I take the liberty of informing you that I have succeeded in constructing a gas gun, which I believe will be capable of producing a report equal to that of any other gun. The establishment and maintenance of such a gas gun would cost less than that for an ordinary cannon, as it requires no care beyond that of the light-keeper, and is capable of being fired at a rapid rate by self-acting machinery. It is not for me to enlarge upon the importance of such a fog signal, and the benefits to navigation which may accrue from it being established at each of your lighthouses where gas is used, but perhaps you will permit me to request that you will be so kind as to ask your board, or as many as can make in convenient, accompanied by Capt. Hawes, to do me the honour to inspect my experiments with this invention, at these works, and form their own opinions respecting it.

I have &c.

W. Lees, Esq., Secretary, (Signed) John R. Wigham.
Commissioners of Irish Lights, Dublin.

Report of a Committee of the Commissioners of Irish Lights on Gas Fog Guns.

Mr. J. R. Wigham, of Messrs. Edmondson and Co., having intimated to the Gas Committee that he had for some time past been engaged in trying various experiments as to the application of oxygen gas in combination with common gas for the production of a powerful sound as a fog signal, and that he had at length carried out these experiments so far to a practically successful issue as to justify him in inviting the committee to witness them.

We proceeded to-day to their establishment, and have now to report the result of our investigation as follows :—The scientific principle is this. An iron tube is filled with common carburetted hydrogen gas, and when so filled is ignited at the muzzle. A jet of oxygen is then admitted into the breach, which uniting with the other gas passes to the extremity of the tube, and when it meets the flame explodes with a violent detonation, as this detonation is altogether the *reverse* of a detonation by gunpowder the latter being caused by the conversion of a solid matter (gunpowder) into a vast volume of gas. The former detonation is caused by the conversion of a large amount of gaseous matter into an almost inappreciable amount of aqueous matter, there is no recoil, no carriage is needed, and in fact a group of mitraillieuses might be discharged on a dinner table without any appreciable result other than the effect on the organ of hearing.

Experiment No. 1 ; a tube about 4 feet long and 1 inch in diameter was first fired ; the noise was very great, but in a confined yard, surrounded by high walls, it was difficult to estimate its volume.

Experiment No. 2 ; a tube about 4 feet long and 2 inches in diameter was next fired ; here the explosion was much more violent, and consequently more effective.

Experiment No. 3 ; here was a combination of 14 tubes, same size of No. 1 bound together by two or three pieces of wire, in fact a mitraillieuse (which is one of the forms of the gas gun) exploding simultaneously, the sound was oppressive, greatly exceeding either of the former.

Experiment No. 4 ; in this case four tubes of same size of No. 2 were bound together, the result was, when the explosion took place a deafening noise and concussion most painful to endure was evolved ; it being daylight we had no opportunity of ascertaining the power of the flashes.

So far as we are able to judge from these experiments we think it is a step in the right direction, and may lead ere long to important results in respect to the transmis-

sion of sound in thick weather. Its advantages may be indicated as follows :—Assuming (which we must do for the present) that a sound can be produced equal to a piece of ordnance (say an 18 pounder) with a charge of 3 lbs. of gunpowder, such as is now used at the Kish Bank light-ship and Rathlin Island lighthouse, and as just sanctioned at Hook Tower, it is obvious that a powerful sound of equal, and probably greatly superior volume may be produced, at a very reduced cost, because the ordinary light-keeper and his assistant will be fully adequate to fire the gun, and consequently the expense of the wages of a qualified gunner, the building of a dwelling for him, and the erection of a magazine for ammunition may be wholly dispensed with, and we may add, that by a simple mechanical arrangement a gun of this description can be made to explode at such regular intervals as may be fixed on.

The subject is one of so much importance, we recommend the Board to apply without delay to the Board of Trade for its sanction for the carrying out of further experiments at Howth Baily, which may be done at a trivial cost if that Board accede to the application already before it for the proposed temporary experiments in relation to using oxygen gas for the increase of illuminating power in lighthouses in thick weather.

If these experiments are to be further continued, it is essential that they be carried out elsewhere than in Dublin. The two that have yet been tried have already produced annoyance in the neighbourhood of Messrs. Edmondson &. Co.'s factory, and if continued will in all probability be prohibited by the police authorities. Until the decision of the Board of Trade be obtained, we further recommend that no steps be taken for the carrying out of any arrangements for the establishment of an ordinary gun fog signal during thick weather at the Hook Tower.

On behalf of the Committee,

8th December 1871. (Signed) Thomas Bewley, Chairman.

The requisite sanction was given to further experiments being made at Howth Baily lighthouse.

The following further Papers on additional Experiments as to the use of Gas for Lighthouse Illumination have been received by the Board of Trade.

Sir, 36, Capel Street, Dublin, 12th April 1872.

You may recollect that the Board of Trade in September last transmitted a report from Dr. Tyndall* on the subject of the use of gas for lighthouse illumination, in which the "expansion" of the system of gas illumination in Ireland is recommended. As the Board of Trade were kind enough to send that report to me also, I have devoted much time to the further investigation of this subject, and I am glad to say with considerable success.

You may remember that in Dr. Tyndall's report he alludes to the "flexibility" with which gas lends itself to the purpose of lighthouse illumination, in contradistinction to oil and paraffin, which do not possess that flexibility.

What I have now the honour of reporting to your Board is a striking example of this flexibility. My desire was to obtain a still more powerful light than even that of the largest full-power gas burners hitherto used, and it occurred to me that if I could fix annular lenses or refracting belts, instead of the top and bottom prisms used in lighthouses, and place a light in the focus of each of them, a very fine effect would be produced.

Of course my chief difficulty was to get the three gas lamps when placed vertically one over the other to burn properly; but after many experiments I found a means of so conducting the air to and from each of the gaslights as not only to cause them to burn well but almost better than under ordinary circumstances.

You can imagine the splendid effect of three of the large-power burners displayed at once, and in connexion with *annular lenses for revolving lights* it appears to me that this new mode of applying gas may be rendered exceedingly valuable, not only for increasing the light, as above described, if so desired, but in particular cases for causing the flashes to recur so frequently and yet with so great duration as almost to be equivalent to a fixed light with all the power of the annular lens.

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* Ante, page 10.

I would respectfully ask your Board to be so kind as to investigate this matter, and witness the experiments to which I have referred, when I need not say that I shall have much pleasure in further explaining the details of this peculiar application of gas for lighthouse purposes.

William Lees, Esq., Secretary,
Commissioners of Irish Lights,
Dublin.

I have, &c.
(Signed) JOHN R. WIGHAM.

REPORTS of the Gas Committee of the Commissioners of Irish Lights on foregoing Letter.

THE Board having referred to the Gas Committee Mr. Wigham's letter of the 12th instant respecting some further improvements he had devised in the application of gas for lighthouse illumination, we, accompanied by the Inspector of Lights, proceeded to Monkstown on Saturday evening last, from whence we had a good opportunity of observing the effect of the new light in the experimental house at Howth Baily, distant about six miles. The night was favourable, being moderately clear. As Mr. Wigham's letter describes his new invention it is needless to state it again here. We are of opinion that the light exhibited fully bears out his statement, that his new triple power produces a "splendid effect." The experiment we witnessed was as follows:—The Baily light was burned at its full power of 108 jets, in the experimental house, the lowest burner also exhibited 108 jets, the centre one 68 jets, and the upper 28 jets. Although the aggregate number of these is not quite double those in the Baily light, yet the new light was apparently many times more brilliant. This was clearly indicated by breathing on the glass on the window of the room from which we made our observations. The Baily light was wholly lost in the extemporised fog; the new light remained brilliant and powerful. We deem this new adaptation of gas of great interest and importance, as it seems evident that by it a penetrating power is obtained in thick weather which we are not aware can be by any other means. We hope ere long that Professor Tyndall may have an opportunity of reporting upon it.

19th April 1872.

(Signed) JAS. A. ST. LEGER.
O. P. KNOTT.
THOS. BEWLEY.

REFERRING to our report of the 19th April respecting gas experiments at Howth Baily, we have now to state that further trials were made on the night of the 23rd instant, both as regards the new triform fog light and the oxygen gas gun.

The place of observation was "Salt Hill" Hotel, Kingstown, distant from the Baily six English miles. The 108-jet burner, in a refracting belt, was first exhibited in the experimental house and compared with the ordinary 28-jet burner in the Baily lighthouse, the top and bottom prisms being covered. The usual difference between these two lights were noted. The 108-jet burner was then lighted in the lighthouse, and was, as might be expected, precisely equal in power to the same sized burner in the experimental house, both having their usual characteristic of extreme brilliancy. While this burner was being exhibited in the Baily lighthouse the two other burners of the new triform gas light were added in the experimental house.

Each of these two lights thus added was equivalent to the 108-jet burner in a refracting belt; the result was that the 108-jet burner in the Baily was completely outshone by the triform light, the latter being not only larger but much more intense. After some time the prisms in the lighthouse were uncovered. This produced only a slightly perceptible increase of light, the triform light being still vastly superior. We again tried the effect of producing an artificial fog by breathing on the glass of the windows to a sufficient degree of density, as to render the Baily light barely visible, yet the triform light still remained powerful and efficient, thus indicating its great value in thick weather. Shortly before the close of the experiments the Baily light was reduced to the ordinary 28-jet power, and then it appeared a mere speck compared with the triform light. These experiments were highly satisfactory, and we cannot but regard this new light as the most efficient fog light yet discovered, and we have again to express our desire that Dr. Tyndall should take an early opportunity of reporting upon it.

During the time the foregoing experiments were going on the oxygen gas gun* was fired from the Baily every few minutes.

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* *See* Papers on pages 15 and 16.

This gun is 9 feet long and 12 inches in diameter, and the cost of each shot is about 14 pence. The ordinary cannon was also fired twice with 3 lbs. of gunpowder. The reports of the gas gun were distinctly heard at Salt Hill, and the flashes were very brilliant. The wind was light from the N.W., crossing the line of sound at right angles.

As a matter of cost, the oxygen gas gun is less expensive than that fired with gunpowder, because the gas can be exploded by a lightkeeper, whereas a gun fired with gunpowder requires not only a magazine for the storing of powder, but also the permanent services of a gunner.

We propose to try some further experiments with the gas gun on the return of the "Princess Alexandra" from Cork before making a final report.

(Signed) J. A. St. Leger.
O. P. Knott.
Thomas Bewley.

30th May 1872.

Sir, Royal Institution, 12th June 1872.

I have had a lengthened interview with Mr. Wigham, during which he explained to me in detail, and by means of models, the principles and performance of the so-called Triform Light.

This interview justifies me in giving renewed expression to the favourable opinion I entertain of Mr. Wigham's labours in relation to the application of gas in lighthouses.

The present proposal is, in my opinion, well worthy of being worked fully out. In its present condition a visit to Ireland could teach me no more than I have already learned from Mr. Wigham regarding the "triform light." The experiments which have yielded the alleged satisfactory results were executed with a mere temporary arrangement, unfit to solve more than a portion of the problem under consideration, and even that imperfectly. It is, in my opinion, highly desirable that arrangements should be made for its complete solution.

One motive which actuated me in recommending gas at Rockabill was, that practical experiments conld be made there on revolving lights, while Howth Baily offered similar facilities with regard to fixed lights. The problem now in hand falls under the former of these two heads.

Mr. Wigham proposes to employ three lenses placed vertically over each other with a light in the focus of each, the number of lights employed to be determined by the state of the weather. That the use of gas renders this possible has been demonstrated by the experiments already made at Howth Baily with the temporary arrangement above referred to.

This arrangement consists, firstly, of a piece of the refracting belt of a fixed apparatus; secondly, of the lens, the purchase of which was authorised by the Board of Trade some time ago; and thirdly of a broken lens, surmounting the two other pieces.

What I now beg to recommend is that the Board of Irish Lights be empowered to purchase one additional lens with a view to the completion of these experiments. The two extra lenses, together with the octagonal belt already existing at Rockabill, will enable Mr. Wigham, during the present summer, to carry out his arrangements and on the completion of the work I shall be in a condition to lay before the Board of Trade a report founded on data which do not yet exist, but which are necessary to the solution of the problem.

The more I consider the subject the more thoroughly I am persuaded that an important future awaits the application of gas in lighthouses, and the more I feel justified in recommending to the Board of Trade the encouragement of experiments of such obvious importance, and involving such definite and moderate outlay as those now contemplated by Mr. Wigham. I am of opinion that the labours of this zealous and intelligent mechanician will eventually profoundly influence for good the lighting of our coasts.

With regard to the gas gun it is my intention to arrange with Mr. Wigham a series of experiments, comparative and otherwise, which will furnish me with the necessary groundwork of a report.

Under these circumstances I propose to postpone my contemplated visit to Ireland until the experimental arrangements have assumed a more perfect form.

C. Cecil Trevor, Esq. I am, &c.
&c. &c. (Signed) John Tyndall.

The purchase of the additional lens was at once authorised.

SIR, Royal Institution, 25th July 1873.

A LITTLE more than a year ago I ventured to recommend to the Board of Trade the purchase of an annular lens with the view of enabling Mr. Wigham to execute experiments on a new form of light of his invention, called by him the Triform Light.

I have now the honour to report to the Board that on Tuesday the 8th of this month I proceeded to Ireland to inspect the performance of this light, and also to instruct myself as to the merits of the gas gun proposed by Mr. Wigham for fog-signalling.

A few preliminary remarks will render the character and performance of the triform light generally intelligible.

A luminous point placed naked in the air radiates its light in all directions, to the horizon, to the zenith, to the earth.

When such a point is surrounded by a fixed dioptric apparatus the skyward and earthward rays are so deflected that the whole of the light impinging on the apparatus, making deduction of what is reflected at the surface of the glass and absorbed within it, is sent forth as an illuminating sheet or layer which usually grazes the horizon.

In a revolving apparatus, the light, instead of being diffused in a continuous layer, is gathered up into distinct beams, which sweep in succession the space between the apparatus and the horizon.

Thus, in the fixed apparatus, the light is economised by preventing its upward and downward waste; being intended to present to the mariner a constant source of illumination. In the revolving apparatus, on the contrary, the mariner at certain intervals, is deprived wholly of the light, in order that he may enjoy it at other intervals with greatly augmented intensity.

The fixed apparatus consists of three parts, namely :—

1. A glass belt which surrounds the light and acts upon its rays by refraction, so as to send them forth in the required direction.
2. A series of prisms below this belt, which receive the rays directed obliquely downwards, and by totally reflecting them send them forth in the same direction.
3. A series of prisms forming a cupola, which receive the rays directed upwards, and after totally reflecting them send them forth in the same direction.

In the revolving apparatus, for the continuous refracting belt is substituted a series of annular lenses, generally eight in number and therefore forming an octagon. As in the fixed apparatus each annular lens is aided above and below by a series of totally reflecting prisms.

The quantity of light issuing from the refracting belt in the one case, and fromthe annular lenses in the other, is greatly in excess of that issuing from the top and bottom prisms taken together. Probably three-fourths of the light which reaches the mariner is in most cases sent to him by the refracting portion of each apparatus.

In the triform light Mr. Wigham substitutes for the bottom prisms a refracting belt or lens, and for the top prisms a second refracting belt or lens; thus forming, in the case of a fixed light, a round tower, and in case of a revolving light, a polygonal tower of lenses.

In the focus of each of the three refracting belts is placed a burner; each "tower" therefore contains three burners placed along the same vertical line. By an arrangement of annular spaces and tubes the products of combustion of each burner are prevented from acting injuriously upon the others.

The apparatus being thus placed distinctly before the mind, its performance will be readily understood. Its *range* of power may in the first instance be referred to.

The light-keeper can confine himself to a single 28-jet burner and a single refracting belt. By lighting two such burners he raises his power to 56, and by lighting three of them he raises it to 84.

The 48, 68, 88, and 108-jet burners can be treated in the same manner. The light-keeper can in each case emyloy one, two, or three burners, according to the state of the atmosphere. Three 48-jet burners would give a light of 144, three 68-jets a light of 204, three 88-jets a light of 264, while three 108-jets would give a light of 324. The range of the apparatus stretches therefore from 28 jets to 324 jets, the latter shedding forth about twelve times the luminous power of the former.

On the evening of the 8th of July I had an opportunity of witnessing the performance of the *fixed* triform light erected at Howth Baily, from a point near the Salthill Hotel, between five and six miles distant from the lighthouse. The triform arrangement was placed in the experimental shed referred to in former reports, which stands a little below the base of the lighthouse tower. In each case the triform light was compared

with the ordinary Baily light; that is to say, the triform of 28 jets below was compared with the single 28 jets above, and so of the other burners, ending with the 108-jet burner in the upper lighthouse, and three burners of the same size in the lower one. The difference, as might be expected, was in each case marked in favour of the triform, though not quite so marked as I expected.

When I next witnessed the performance of the fixed triform I had the advantage of being accompanied by an independent and most sagacious observer. My visit to Ireland being meant to embrace experiments on the gas gun, and these experiments connecting themselves immediately with those now in prosecution at the South Foreland, I suggested to the Trinity House that it might be desirable for one of the Elder Brethren to accompany me to Ireland. On the morning of the 9th accordingly I had the gratification of being joined by Admiral Collinson, and on the evening of the 10th I had an opportunity of witnessing in his company the performance of the fixed triform light.

The observations began near Kingstown, our last place of observation being the deck of the gun-boat "Hawk" in Kingstown Harbour.

When the 28-jet burner was ignited above and the three 28's below, the preponderance of the latter was, as might be expected, manifest. Still, though 84 jets were alight in the triform, I thought a 68-jet burner in the upper house would have been fully equal to the 84 jets in the lower. This, I am informed by Mr. Wigham, he subsequently found to be the case. It arises from the fact that the burner in the upper house is aided by the top and bottom prisms, while each burner in the lower house radiates through the refracting belt alone.

Experiments of the same kind were made with the other burners. The weather was clear and the single burner in each case showed a very fine light, but in each case it was distinctly transcended by the triform.

The concluding observation was, as I have said, made from Kingstown Harbour. The 108-jet burner was in the upper house and showed a noble light; three 108-jet burners were in the lower house. The distance of the place of observation from the lighthouse was a little over five miles, and at this distance the flames of the three burners seemed blended together to a single ball of light of extraordinary intensity.

To my eye the difference of *size* between the light in the lantern and that in the experimental shed did not appear remarkable, but the latter appeared as if into it had been compressed a distinctly greater amount of light. I hardly think that in my experience of lights, I ever saw anything so powerful, and I have reason to believe that my judgment in this respect is entirely corroborated by that of Admiral Collinson.

When the burner in the upper house was changed from 108 jets to 28 jets, it became instantly a diminutive satellite of the large light, and could hardly be imagined to be the same pure, strong light which it showed itself to be when burning without the overmastering presence of the triform.

The record of my observations on the triform fixed light is here concluded. I shall add a few general remarks regarding it further on.

The Board will probably remember my recommending that the gas apparatus erected for experimental purposes at Rockabill should be permitted to remain there permanently, and I accompanied my recommendation by the remark that it was desirable to have in the neighbourhood of Dublin two establishments where experiments on the two classes of lights might be conducted.

Since that time the gas has continued to act at Rockabill in a highly efficient manner, and its existence there enabled us to extend our experiments on the triform light to the revolving apparatus. Accompanied by Admiral Collinson, I went to Rockabill on the 9th, inspected the arrangement, and drew out a programme of experiments. Three panels of the upper and lower prisms had been removed, and instead of them we found two annular lenses, which, with the lens of the apparatus itself, made three. In the focus of each of these lenses was placed a burner, the arrangement of the three burners being the same as that already referred to in the case of the fixed triform.

Thus five panels of the apparatus were in their ordinary condition; two of its annular lenses were without the usual aid of top and bottom prisms, while one side of the octagon consisted of the three annular lenses so placed that their three centres were in the same vertical line.

The night of the 9th was thick, and heavy rain fell at intervals, We began with the 28-jet burner, and advanced to the 48 and 68-jet burners. We did not try a higher power. The time of an entire revolution of the Rockabill apparatus is 96 seconds; and, as there are eight panels, the time from flash to flash, counting from their

centres, is 12 seconds.* During a complete revolution we had five beams of the ordinary kind where lenses and prisms acted in conjunction; two beams where the lenses alone acted, and one beam from the triform. In all cases the flash from the triform proved itself most luminous.

On the night of the 10th these experiments were repeated with the same substantial results. Admiral Collinson expressed the opinion that the superiority of the triform was more marked in thick than in clear weather. In this I agree with him.

These experiments leave no doubt upon the mind that the triform arrangement places in our hands a practical and powerful means of illumination, and that it is equally applicable to fixed and to revolving lights. By it, moreover, we are enabled to bring an amount of luminous power into play which would be quite unattainable with a single burner.

This must be understood as the great feature of the triform—the possibility of applying power in case of need. In it indeed economy is to some extent sacrificed to power; for the top and bottom prisms being abandoned, the light derivable from these sources is lost. It is, I believe, to some extent made good by the heating of the air which feeds the two upper burners, but to what extent I am not prepared to say.

I think it in the highest degree important that clear notions should be entertained of the relation of this question of light-power to "thick" and "foggy" weather. In the first place it is hopeless to aim at penetrating a really dense fog, to any considerable extent, with any light whatever. Wishing for some definite data here, on Saturday the 19th of July my assistant, at may request, went to Haggerston Station, Kingsland Road, and made the following observations on a steam cloud issuing from a slowly moving locomotive, and crossing the disk of the unclouded sun.

1st observation. Time, 3.39 p.m. Total obscuration of sun's disk when steam cloud passed over it. Sun powerful.

2nd observation. Time, 3.47 p.m. Total obscuration as before.

3rd observation. Time, 3.52 p.m. Total obscuration.

4th observation. Time, 4.2 p.m. Total obscuration followed every gush of steam cloud.

Other observations were made; but these suffice to show that the sun itself, even when very powerful, is unable to drive its rays through a few feet of steam cloud.

I noticed a similar effect produced upon the powerful Baily light a few days ago in Ireland.

But the sun, which, as a defined object, ceases to be seen through the artificial steam-cloud, or through a natural atmospheric cloud, may, notwithstanding, do important service by illuminating the cloud which hides it. We transact the business of the world on cloudy days, when the sun is unseen, by the light imparted to the clouds and scattered by them upon the earth. And so a powerful light in one of our lighthouses, may, though unseen as a defined object, do good service by illuminating the fog which intercepts it direct rays.

This is not only a theoretic deduction, but a practical fact. I took occasion recently to question separately the captain, and the second officer of the mail boat "Leinster," plying between Holyhead and Kingstown, and they both agreed that the illumination of the fog by the South Stack Light is frequently seen, and is of the highest utility even when the light itself has ceased to be visible. It is needless to say that the stronger the light the greater the distance which this fog-gleam penetrates the atmosphere, and the greater the chance of its being useful to the mariner.

But fogs vary in density, and between our densest fog and our clearest air, there are infinite gradations. It is not sound reasoning to conclude that because in a dense fog weak lights and strong are alike extinguished, the lights are therefore, as regards fog penetration, equally valueless, for there are states of the atmosphere when it is of the highest importance that the mariner should see his light, and when if a low power be used he will not see it, while if a high power be used he will. Fogs so dense as to reduce all lights to equal helplessness are happily not frequent, and it is in the commonest forms of "thick" weather that the superiority of a strong light would be most beneficially felt.

I have already stated that the triform flash, which occurs at Rockabill once every revolution, is superior to all the others. Reasoning alone would lead us to conclude that with a gradually thickening atmosphere the feebler flashes would disappear first, the strong beam of the triform proving itself to be useful after the others had ceased

* I do not know why this rapid succession was adopted; it seems to me to be simply tantalising to the mariner.

to be so. This is corroborated by observations made from the Hill of Howth, and from the "Kish" lightship. At all times when the light is seen, one flash in eight is paramount, but on many occasions the seven minor flashes disappeared altogether, and the eighth flash alone was visible.

In the experiments hitherto recorded with the triform arrangement, the lenses were so placed that their centres were in the same vertical line. This, for shortness' sake, may be called the *vertical* arrangement. By displacing the lenses so that their centres are no longer in the same vertical line, we have what may be called the *oblique* arrangement. Here the advantage gained by the superior brilliancy of the triform beam disappears, being exchanged for an advantage of another kind. By this arrangement the number of beams reaching the mariner during an entire revolution would be trebled without any shortening of their duration. But, each of them coming from a single refracting belt, its intensity would be proportionately reduced.

On a former occasion I was honoured by the company of Sir Leopold McClintock in observing the lights of Howth Baily and Rockabill, and in a note written at the time he expressed the opinion that the applicability of gas both to fixed and revolving lights had been reduced to demonstration. This, I have reason to know, is also the conviction of Admiral Collinson. Into the question of cost of course these distinguished officers have not entered; and on this score we may hope for additional information from the investigation to be commenced, I trust, in a few days at Haisbro'. In one important particular, which I have already dwelt upon, no other mode of illumination can compete with gas, and that is the readiness with which it lends itself to individualization. By its wise employment, those disastrous shipwrecks which arise from the mistaking of one light for another may be materially lessened, if not rendered impossible.

The expense of a triform apparatus would probably be not greater than that of an ordinary apparatus with top and bottom prisms.

There is no proposition at present before me with regard to the introduction of this light, and I limit myself, therefore, to describing its character and performance. But I think that the skill and energy, which, without extravagance, and proceeding by the sure way of tentative experiment, have achieved so much in Ireland, are well worthy of the favourable consideration of the Board of Trade; not only on their own account, but through the wholesome stimulus which they are calculated to impart to lighthouse illumination generally.*

Gas-gun Experiments.—A mixture of coal-gas and atmospheric air, and still more a mixture of coal gas and oxygen, is known on ignition to explode with loud detonation. Taking advantage of the existence of gas at Howth Baily, the Board of Irish Lights have authorised Mr. Wigham to erect in the gas-house yard an apparatus for the generation of oxygen. They have also authorised the construction of a gas-gun, an instrument of the most simple description; it consists of a piece of an iron gas "main" many feet long and from a foot to 18 inches in diameter.

A gas-holder of measured capacity receives from the oxygen apparatus a quantity of oxygen sufficient to half fill it, coal gas is then added until it is full. The coal gas being the lighter of the two, ascends through the oxygen and thoroughly mixes with it. From the gas-holder the mixture is transferred to the gun. It enters at the breech, which is slightly elevated above the muzzle, and the mixed gas being lighter than atmospheric air has no tendency to flow down by its own gravity. It is fired by a friction tube.

We experimented with two gas-guns, twelve feet long and twelve inches in diameter, and a longer one 18 inches in diameter. With these were compared a brass gun and a carronade, each firing a charge of 3 lbs. of gunpowder. The two 12-inch gas-guns could be fired together or in quick succession, thus giving a peculiar character to the sound.

On the evening of my arrival the guns were all fired at Howth Baily, while I stood beside the railway near the Salt Hill Hotel. The wind was light, and blowing from the place of observation towards the Baily. No sound whatever was heard either from the gas or the gunpowder guns. The flashes were seen, those of the gas-guns being brightest.

I was not surprised to learn that the sound was usually heard with distinctness

* I think it a fortunate circumstance when the interests of a really intelligent and skilful man coincide, as I believe they do in the case of Mr. Wigham, with the interests of the public. Hence my desire that he should have fair play and encouragement. He has done much, and is destined, I think, to do much more, towards the improvement of lighthouse illumination. But however natural it may be in an inventor to do so, I should regret any attempt, on his part, to make his truly meritorious work appear an iota better than it is in reality.

at our place of observation; for previous experiments at the South Foreland had revealed the fact of a day's interval so changing the conditions of the atmosphere that a sound capable on one day of being heard to a distance of ten miles, on the day following ceases to be heard at a distance of three miles.

Various experiments were subsequently made with these guns, it is needless to describe them in detail. The result may be generally stated to be that as regards the loudness of the sound the carronade had the advantage of the gas-guns, while as regards the vividness of the flash the gas-gun had the advantage of the carronade. This is also a point on which I questioned the intelligent and courteous captain of the "Leinster," and he informed me that only on two occasions (I believe) of impenetrable fog has he failed to see, and to derive great advantage from seeing, the flash of the gun at the North Stack near Holyhead. The flash, therefore, is an important element in this problem. Experiments in hazy weather would be necessary to decide the comparative powers of the gas flash and the gunpowder flash.

Pending the decision of this point all that can be said is that the gas-gun, as a means of fog signalling, is well worthy of further investigation. The cost of the powder is, I am informed, from 2*s*. 7½*d*. to 2*s*. 9*d*. per shot, whereas the cost of the gas for the larger gun is 1*s*. 3½*d*., and for the smaller gun 6¾*d*. per explosion. Before recommending the gas-gun at gas stations these figures would need a searching examination.

I may be permitted to express my recognition of the prompt, earnest, and thorough manner in which my suggestions have hitherto been carried out by Capt. Hawes and Mr. Wigham, and also of the highly efficient manner in which all my wishes on this last occasion were seconded by Mr. Legget, who commanded the gun-boat "Hawk."

I have, &c.

C. Cecil Trevor, Esq. (Signed) JOHN TYNDALL.
&c. &c.

The following REPORT from the late COMMANDER HAWES, R.N., Inspector of Irish Lights, has been received at the BOARD of TRADE, in reply to a communication addressed to the IRISH LIGHTHOUSE BOARD asking for a Report on the comparative merits of MINERAL OIL and GAS for Lighthouse Illumination.

Irish Lights Office, Dublin,
SIR, 21st March 1873.

I HAVE to report that when mineral oils for the illumination of lighthouses were first brought under the notice of the Commissioners of Irish Lights about two years back, Poolbeg lighthouse, Dublin Bay, was proposed for trying the paraffin light, but was postponed by the Board of Trade pending further investigation in England.

Since then it appears from the four Parliamentary papers 318–1870, 2 and 264–1872, and 3–1873 referred to me for report, that much has been done to render the substitution of such oils in place of colza for lighthouses more desirable than was indicated from the first experiments; having perused these papers with much attention I find from the account given of the investigations, that much progress has been made in this mode of illuminating lighthouses, culminating in the new and almost perfect four wick lamp referred to by Mr. Douglass, one of which lamps the Elder Brethren of the Trinity House have been so good as to send here for trial within the last few weeks.

In my report of the 18th of April last, it was stated that I proposed to compare the light given by a paraffin four wick lamp with that of the ordinary 28 jet gas burner at Howth Baily lighthouse.

On the arrival of the above-named lamp it was sent to that station, when a careful set of experiments were made and observed from Kingstown. The particulars of these experiments are annexed to this report, but the result may be thus briefly given.

1st. The light of the paraffin lamp was somewhat superior to the 28 jet gas burner, when consuming only 33 cubic feet per hour. The Commissioners are aware that at that rate of consumption the 28 jet burner is equal in illuminating power to the ordinary four wick colza oil lamp, which proves the superiority of the new paraffin lamp over the old colza lamp.

2nd. The paraffin lamp was precisely equal to the 28 jet gas burner when consuming 44 cubic feet per hour.

3rd. The paraffin lamp was consequently inferior to all the other four increased powers of the gas burner.

These results I have since verified by careful photometric experiments. In my letter before referred to it was also intimated that I proposed to compare the paraffin

four wick lamp sent by the Trinity House with one made by Mr. Wigham of this city, which I have done, and find that the illuminating power of these lamps is *so nearly equal* to each other that it is very difficult to say which has the advantage.

Mr. Wigham's lamp has this to recommend it, that its chimney glass is less liable to breakage, and if broken is less costly than the glasses used with the Trinity lamp.

I apprehend also that this will be found of considerable advantage in practice, more especially if it should ever be decided to use paraffin lamps of larger size than the ordinary four wick lamp.

The Board of Trade in their letter of the 1st of May last, H. 1,996, request that in reporting on the comparison between mineral oil and gas the question of cost may not be lost sight of; I have therefore given much attention to the subject and am led to the conclusion that the cost of mineral oil and gas when used in lamps of the ordinary size employed in first order dioptric lights is practically equal, even when the price of gas making coal is above the average, but when I take into account the economy which gas affords when used for intermittent lights, I am *obliged* to acknowledge that gas is much more economical.

As the Board of Trade in their most recent communication of the 7th inst., H. 1,210, on this subject ask for a report of the comparative "merits" of gas and mineral oils, I have endeavoured to embrace in the following comparative statement not only some particulars as to the economy of gas as compared with paraffin, but also some other points in which, I believe, gas is of *superior* merit to paraffin.

Comparison of Gas and Paraffin Oil for Lighthouse Illumination. Cost. That paraffin oil for lighthouses is not cheaper than gas may be seen from the following figures. The cost per hour of the four-wick first order paraffin oil lamp as ascertained by Dr. Tyndall, and reported in Parliamentary paper, No. 318 of Session 1871, page 44, is 4·01*d.* The cost of a 28 jet burner consuming 38 cubic feet per hour is 3·96*d.* I have found by photometric experiments, as before stated, that a 28 jet gas burner consuming 44 cubic feet per hour is precisely equal in illuminating power to the new four-wick first order paraffin oil lamp of the Trinity House. The cost per hour of this Trinity lamp, taking oil at 1*s.* 10*d.* per gallon, its present price, including delivery at Howth Baily station, is 5·50*s.* The cost per hour of the 28 jet gas burner consuming 44 cubic feet per hour is 5·25*d.* In this estimate I calculate the cost of gas at 10*s.* per 1,000 cubic feet, which even at a high price for coal cannot be considered too low a rate. I have had recently under my considerations a plan by which the cost of producing cannel coal gas may be considerably reduced, and thus it will be still *more* economical than mineral oils for lighthouse purposes; but even according to our present system it is evident from the above that light for light, in the particular burners experimented upon, gas is cheaper than paraffin; but for lighthouse purposes the superiority of gas in illuminating power is much greater than the paraffin, because whereas there is only one more powerful form of paraffin burner than the four-wick lamp, there are four other powers of gas burners available for lighthouse purposes which may be applied in a moment according to the density of the atmosphere as follows:

48	jet burner	consuming	75	feet	per hour, and costing per hour	9*d.*
68	,,	,,	108	,,	,, ,,	12·90*d.*
68	,,	,,	186	,,	,, ,,	22·32*d.*
108	,,	,,	240	,,	,, ,,	28·8*d.*

Thus it will be seen that by the use of gas we can have at comparatively small increase of cost per hour a light of largely increased power for fogs or snow storms to the great advantage of the mariner (a result not obtainable from paraffin).

With respect to the increased cost for those additional powers which may be used with gas in foggy weather it is probable that the total cost per annum for this increase would not be much more than 5 per cent. on the annual consumption, but during a single hour's exhibition of the larger powers, the light is so *much superior* that by its aid many valuable lives and much property might be saved, and this superior illuminating power in thick weather is, in my opinion as a sailor, by far the most important consideration for lighthouse authorities.

There is another important advantage to be gained by the use of gas in lighthouses not obtainable by paraffin (viz.):—

The Ease and Economony with which Gas can be applied to the purpose of Flashing or Intermittent Lights.—It has been shown by the experiments of Dr. Tyndall that an intermittent light has more effect in arresting the attention of the mariner than a fixed light, and that, for example, a flashing light of fair duration which is shown only every alternate quarter minute, will be found not only quite as effective, but even more

useful than a continuous fixed light; it is evident therefore that the application of this principle to the above calculation would immediately and largely reduce the cost of lighting by gas below that of paraffin, without in the slightest degree impairing the efficiency of the lighthouse service. If it were desirable to have longer intervals of darkness than the foregoing, for instance, if it were preferred to have the gas light exhibited for two seconds with an interval of darkness of four seconds or more between each exhibition of the light, the cost of gas would of course be still further reduced below that of paraffin.

This subject, of the value of the system of intermittent lights (for which gas is so well adapted), has so much impressed my mind, that although somewhat of a digression, I will quote an extract of a letter received by Mr. Wigham the patentee of the gas system from Admiral Sir F. Leopold McClintock, as follows :—

"No better means could be devised for distinguishing a light from other lights than by the plan of a group of flashes. The half minute interval between the groups is quite sufficient and yet not greater than can easily be estimated by the observer without having recourse to a watch to measure the time, and the periods recurring within 45 seconds that short time is sufficient to determine which light it is, and both these are of great practical advantage. I consider that the superior brilliancy of gas to oil and its application both to revolving and fixed lights is most satisfactorily established, and as I regard the proposed change solely from the seaman's point of view, I look exclusively to their relative efficiency without any regard whatever to their comparative cost."

These remarks as to the saving by the use of gas for intermittent lights are based on the fact that there is no saving of paraffin oil when its light is eclipsed by shades, but with gas, as above shown, the consumption ceases and gas is saved during the eclipse. I am of opinion that to secure these advantages some of our fixed oil lights might with benefit to the public service be changed to intermittent gas lights.

Triform Gas Light.—Dr. Tyndall proposes shortly to inspect and report upon this system of gas light, and I apprehend that if any additional evidence be necessary to prove the superiority of gas over any oils as a means of illuminating lighthouses, it is found in the fact that it would be impossible to employ paraffin or any kind of oil in a triform apparatus, the powerful light of which the Commissioners have already had an opportunity of observing in a preliminary experiment witnessed from Salt Hill. Before leaving this part of the subject, I think it right to add that Dr. Tyndall also proposes to investigate a new system of fog signalling at lighthouses by means of gas guns, and that should the merits of that plan be such as Mr. Wigham claims for it, another item will be added to the list of the advantages which the use of gas possesses, and which are not to be found in any oil system.

At Rathlin Island lighthouse in the year 1871 there were expended 1,102 gun powder cartridges. These cost on an average about 3*s.* each, making the cost for the year 165*l.* 6*s.* Each gas gun explosion, according to Mr. Wigham, is calculated to cost about 1*s.*, and if this be correct, it is evident that if gas had been used at that station in that year, it would have effected a saving to the lighthouse service of two-thirds of the above, namely the sum of 110*l.* 4*s.* Besides, when a gas gun is used, the attendance and wages of a gunner are not required, nor are buildings for the storing of ammunition necessary.

Galley Head.—With regard to the Board of Trade's inquiry respecting "Galley Head," H. 1,210, I am of opinion that it would be desirable that preparations should be made for lighting that important station with gas, and that the form of gas light used there should be the "group of flashing light" commented upon by Dr. Tyndall in his report of the 18th September 1871, in a foot note to which he says, after referring to it as a light of unrivalled individuality of great power, and in Ireland at least of moderate cost, "It might be tried in the next new lighthouse and thus tested "without any disturbance of existing lights."

General Application of Paraffin instead of Colza Oil.—The Parliamentary Papers render it abundantly evident that paraffin as a lighthouse illuminant is much less costly than oil, and it is exceedingly interesting to find from the comprehensive report of Mr. Douglass that these experiments have enabled him not only to perfect the paraffin lamp as he has done, but also so much to improve the colza lamp.

Paraffin and colza may now be considered as equal to each other in illuminating power, and it is only the question of "cost" which arises in the matter of choice between them.

The element of danger, *i.e.*, risk of fire and explosion, is no doubt also to be taken

into account in the case of paraffin, but with the use of sufficient precaution this risk is perhaps but small.

I have no hesitation, therefore, in giving my opinion that it would be desirable to use paraffin instead of colza at some of our lighthouses.

The Secretary,
Commissioners of Irish Lights.

(Signed) E. W. Hawes,
Inspector of Lights.

Howth Baily Lighthouse.

Programme of Experiments, 26th February 1873.

Lower House.

No.	Sunset.	Trinity House Paraffin Lamp.	—
1	7.30 - - -	Out	—

Upper House.

2	6.0 to 6.10 - -	28 jet burner 33 feet per hour -	Not so good as paraffin.
3	6.10 to 6.15 - -	48 do. do. do. -	Better than paraffin.
4	6.15 to 6.20 - -	68 do. do. do. -	Still better.
5	6.20 to 6.25 - -	88 do. do. do. -	Far more brilliant.
6	6.25 to 6.30 - -	108 do. do. do. -	Far more brilliant, and very much larger flame.
7			
8	6.30 to - - -	68 do. do. do. -	Same observation as No. 4.

Programme of Experiments with Gas and Paraffin Oil, 11th March 1873.

Lower or Experimental House. — Paraffin Lamp.	Upper or Lighthouse. — Colza Oil.	Note.—Cover Top and Bottom Prisms through all Experiments. — Gas Burner.	Observations.
Under the Management of Mr. Ayres from sunset to 9.50 p.m.	In Upper House from sunset to 8.30 p.m.	In Upper House - - - -	Colza lamp inferior to paraffin.
	8.30 to 8.35 -	28 jets gas burner 33 ft. per hour -	Inferior to paraffin and same as colza lamp.
	8.35 to 8.40 -	28 jets gas burner 44 ft. per hour -	Fully equal to paraffin.
	8.40 to 8.45 -	48 do. do. do.	Superior to paraffin.
	8.45 to 8.50 -	68 do. do. do.	Much superior.
	8.50 to 8.55 -	88 do. do. do.	Very much superior.
	8.55 to 9.0 -	108 do. do. do.	So superior as to cause the paraffin to appear quite small.
	9.0 to 9.5 -	One short flash of 3 seconds duration every minnte.	—
	9.5 to 9.10 -	Two short flashes every minute -	All these flashes showed very striking by the superiority of the gas flame, for while the gas was turned down the paraffin showed a very brilliant light, when the gas was turned up the paraffin light looked very small and feeble.
	9.10 to 9.15 -	Three do. do. -	
	9.15 to 9.20 -	Four do. do. -	
	9.20 to 9.25 -	One long flash, 15 seconds duration	
	9.25 to 9.30 -	Eleven long flashes, every minute -	
	9.30 to 9.35 -	Three long flashes, every minute -	
	9.35 to 9.40 -	One long flash and one short.	—
	9.40 to 9.45 -	Two short flashes and one long.	—
	9.45 to 9.50 -	One long flash and two short.	—
	9.50 to	Finish three flashes and return to ordinary light for the evening.	—

Note.—A short flash consists of a period of light of three seconds' duration. A long flash consists of a period of light of 15 seconds' duration.

(Signed) E. W. Hawes,
Inspector of Lights.

THE USE OF GAS FOR LIGHTHOUSE ILLUMINATION has been under the consideration of the CORPORATION of TRINITY HOUSE for some time, and experiments have been conducted by them at the HAISBRO' lighthouses on the coast of NORFOLK, Mr. Wigham's gas burner, &c. being placed in the High lighthouse, and the Trinity Colza oil lamp in the Low lighthouse. Some of the results of these experiments are given in the following communications.

Trinity House, London, E.C.,
28th March 1873.

SIR,

WITH reference to previous correspondence on the subject of the use of gas for lighthouse illumination and of its experimental use at the Haisbro' High lighthouse, I am now directed to transmit to you for the information of the Board of Trade, copy of a report of a preliminary investigation made by a Committee of Elder Brethren on the night of the 13th and 14th instant, also a resumé of observations recorded during the months of January and February of the present year at the North Haisbro' and the Newarp lightships, both of which vessels are peculiarly well placed for observing the Haisbro' shore lights, the former being nine miles from the lighthouses with the Cromer light in sight for comparison, and the latter being 12 miles distant with the Winterton in view.

I am at the same time to enclose an extract from a report of Mr. Emerson, the corporation's superintendent at Yarmouth, as to his experience of the gas light, together with approximate statements of the expense of manufacture and maintenance of the gas from 1st July 1872 to 14th March 1873, and of the oil at the Low lighthouse for the same length of time. It will be advisable, however, that the statement as respects the gas, although generally correct, should be the subject of further investigation, a point to which I am presently to refer.

From the observations at the lightships, which, though only given for a limited period, are substantially the same as those during the other five months of the exhibition of the gas, the equality of the 28 jet gas-burner, and of the ordinary first order for colza oil was fully established, and the Elder Brethren therefore substituted for the latter the improved Trinity burner of the same dimensions (but consuming about 17 per cent. less oil), and changed the conditions of the comparison to that extent.

To the record of the observations made by the Elder Brethren, I have only to add that the night was very suitable for witnessing the experiments, the moon being clouded over, the atmosphere somewhat variable, with occasional showers of sleet, and as the observers, six in number, were well practised, and differed but little in their conclusions, it may be assumed that the results of the comparisons as stated are substantially correct, showing that in power the 68 jet gas and the oil burner are equal, the former being (though almost imperceptibly) whiter, and that beyond 68 jets the gas is superior in proportion to the amount of it expended, whether with good results or not the observations of Mr. Emerson leave open to doubt.

It being desirable that on ordinary occasions the two lights should be nearly equal in power the introduction of the superior oil burner has rendered it necessary to increase the power of the gas light, and in consequence the expenditure will in future be larger than hitherto; but the Elder Brethren have only at present ordered the increase to 48 jets, which though 10 to 15 per cent. less powerful than the present standard, they consider sufficiently near until further observation has confirmed the results now arrived at, and it may be observed that should the economy of the new burner, as shown in the experimental room, be confirmed in practical working, there will be a diminution in the consumption of oil against the increase in the expenditure of gas necessary to bring the two sources of light to a level.

In submitting these statements for the consideration of the Board of Trade, I am to request a reference to my letter of 6th October 1870, and to observe that as it was understood when this experimental trial of gas was undertaken that on all points connected with the materials, manufacture, and cost of gas, the gas referees should be the judges, the Elder Brethren would suggest that those gentlemen, pending the further observations and the final report of the Elder Brethren, be requested to report thereon.

Up to this time every detail of the plant and working, including the appointment of the gas labourer and the quality and price of the coal, has been carried out with their cognisance and approval, as well as with that of Mr. Wigham, and I am to say

that in the event of there being any difficulties in the way of again obtaining the services of the gas referees, the Elder Brethren would ask the Board of Trade to nominate some other competent authority to investigate the subject; or if the Board of Trade should desire it the Elder Brethren would under the circumstances be willing to nominate a gentleman known to them, having the necessary qualifications for the work.

I am further to add that the Elder Brethren propose to send a six wick burner immediately to the Low light, to be used at such times as a proportionally higher power of gas is used at the High, the keepers at both towers being instructed to make the change simultaneously from the lower powers by signal, the result of which will be communicated in the final report.

I have, &c.

The Assistant Secretary,
Harbour Department, Board of Trade.

(Signed) Robin Allen.

Memorandum of Experiments with both Gas and Oil Lights as witnessed by the Committee from the "Beacon" Steamer on Thursday Evening, 13th March, and Friday Morning, 14th March 1873.

Thursday, March 13.

11.30 p.m.—On arriving at a position between the Cockle light-ship and Winterton lighthouse sighted "Haisbro'," both towers showing oil lights;

Haisbro' high, the old burner.

Haisbro' low, the new burner.

Judging by the eye, the new burner was considered to be about 40 per cent. superior to the old.

Friday, March 14.

—.30 a.m.—The old oil burner, which from numerous reports furnished from the Haisbro' light vessel, had been found equal to the 28 gas jet, was put out at the High light and the 28 gas jet shown, as indicated by several occultations, our position then about three miles off, and after observing this for some time it was clearly ascertained that the new oil burner showed about 35 per cent. better than the 28 gas jet.

1 a. m.—Some occultations indicated that the 48 gas jet was being exhibited, our position then about four miles off. It was found that the new oil burner showed a superiority of from 10 to 15 per cent. over the 48 gas jet.

1.30 a.m.—Occultations indicated that the 68 gas jet was being exhibited, our position then about seven miles off. At this point the burners of both oil and gas appeared to be identical in power, the only sensible difference being that the gas seemed a whiter light than the oil.

2 a.m.—Occultations indicated that the 88 gas jet was being exhibited, our position then about seven miles off. With this power the gas obtained a decided superiority over the oil light of about 20 per cent.

2.30 a.m.—Occultations indicated that the 108 gas jet was being exhibited, our position then about 9½ miles off. The gas was found to have increased its superiority to from 40 to 50 per cent. over the oil light.

3 a.m.—Occultations again indicated a change from the 108 jet down to the normal condition of 28 jet, our position then about 9½ miles off. It was then noted that the new oil burner had regained its superiority of 35 per cent. over the 28 gas jet as at the three mile range.

The night was fine, but cloudy, with moon obscured, smooth water with light northerly breeze, all the neighbouring lights showing up well.

The Committee considered that the experiments had been very satisfactorily carried out, and recommend that very correct statements be made of the expense and maintenance of the gas light.

Looking at these results, the Deputy Master and Captain Drew on visiting Haisbro' later in the day and seeing the necessity of keeping the lights of equal value, instructed the keepers to burn the 48 gas jet as the standard, increasing to the other numbers, according to the density of the atmosphere.

(Signed) F. Arrow.
E. P. Nisbet.
J. Drew.
J. S. Webb.

Trinity House, March 18, 1873.

Mem.—The temperature in the respective lanterns during the experiments was as follows :—

At the High light.

13th, at lighting	40°
„ midnight	49°
14th, at extinguishing	48°

At the Low light.

13th, at lighting	41°
„ midnight	48°
14th, at extinguishing	46°

Analysis of Observations made during the months of January and February on board the North Haisbro' light vessel, distant 9 miles. The Observations were made every hour.

The gas light is recorded generally as being equal to the Low (oil) light, the exceptions being that 20 times it is said to have been brighter, and 24 times duller than the oil light.

The colour of the two lights is said to be the same throughout.

As compared with the Cromer revolving light, 10½ miles from the light-ship, the gas light is recorded as being generally equal to it, but 85 times it is stated to have been superior and 83 times inferior to it.

The gas light appears to show a steady light with no irregularities or fallings off.

In comparing the returns from the High lighthouse, showing the burners used each night, with the observations from this light vessel, it does not appear that any improvement in the gas light is recorded on those occasions when the larger burners were used. There is no superiority recorded in favour of the gas light in thick or bad weather.

Analysis of Observations made on board the Newarp light vessel, distant 12 miles. The Observations were made every hour.

The gas light is recorded generally as being equal to the oil light, the exceptions being that 16 times it is said to have been superior, and 71 times inferior to the oil light.

The colour of the two lights is said to be the same throughout.

As compared with the Winterton fixed light, 7½ miles from the light-ship, the gas light is generally recorded as inferior, the exceptions being that 104 times the two are said to be equal.

The observations record that the gas light generally burns steadily, but on a few occasions it is said to have been "wavering."

In comparing the returns from the High lighthouse, in which it is stated what burners were used each night, with the present observations, there is no sensible improvement of the gas light recorded on those occasions when the larger burners were used.

There is no superiority recorded in favour of the gas light in thick or bad weather.

Extract from Mr. Emerson's Report.

"The keepers at the Low light state that in a thick fog they cannot see the least glimmer of a light from the High Tower, when the 108 burner is used, and I laid at anchor one night off Haisbro', very close into the beach, and a thick fog came on, but we could see nothing of either light, and I afterwards ascertained the 108 burner had been used at the High light. I have on several occasions when coming in from the Leman and Ower for the Newarp observed the Haisbro' lights come above the horizon, and in each case at those long distances the Low light has appeared slightly the better of the two; that has been, of course, in clear weather, when the 28 burner was in use.

"I once passed the lights when a drizzling rain was just commencing; before the rain commenced they were about equal, but as soon as the rain came down the High, which was only showing a 28 burner, appeared only about half the size and density of the Low one."

Haisbro' Lights.

STATEMENT showing the cost of Manufacture and Maintenance of Gas from 1st July 1872 to 14th March 1873.

	£	s.	d.	£	s.	d.
23 tons 7 cwt. furnace coal, at 25*s.* 10*d.* -				30	3	2
37 „ 10 „ cannel coal, at 54*s.* 10*d.* -				102	16	3
Coals - - -	2	7	0			
Porterage - -	0	1	4			
Freight - - -	0	6	6			
	£2	14	10			
Wages to labourer, 37 weeks, at 15*s.* - -				27	15	0
Expenditure - - -				160	14	5
Gas consumed at the lighthouse per meter - -				244,410	feet.	
Do. do. cottages - - -				21,590	„	
Total - - - -				266,000	feet.	

Cost per 1,000 feet, 12*s.* 1*d.*

The cost of the gas consumed at the lighthouse for the 37 weeks, 147*l.* 13*s.* 3*d.*, or an average of 3*l.* 19*s.* 10*d.* per week.

The average production of gas from 1 ton cannel coal equals 7,093 feet, or from the cannel and furnace coals combined equals 4,371 feet per ton.

STATEMENT showing the cost of Oil and Lighting Stores expended in 37 weeks at the Haisbro' Low lighthouse.

	£	s.	d.
752 gallons rape oil - - - - -	117	2	4
493 at 3*s.*			
259 „ 3*s.* 4*d.*			
Lighting stores - - - - -	5	6	7
	122	8	11

The price of the oil is reckoned at the contract price of 1870 and 1871.

Note.—By the adoption of the new Trinity burner a saving of 17 per cent. in the consumption of oil is obtained with an improved light *i.e.*, as compared with the old burner.

	£	s.	d.
As per statement - - - -	122	8	11
Deduct 17 per cent. saving on 117*l.* 2*s.* 4*d.* - -	19	17	10
	102	11	1

SIR, Royal Institution, 12th April 1873.

I HAVE proposed to the Elder Brethren in accordance with your wish expressed in H. 1791 the inspection of the lights at Haisbro' on the night of Monday the 21st.

I have appended to this proposition the following remark:—" It will aid me, and " render my conclusions more prompt and satisfactory, to have Mr. John Wigham, the " inventor of the burner employed at Haisbro' at my side at the time. Questions will " probably arise which he can best answer, and which it will be necessary to answer " prior to the writing of my report. I should therefore feel much obliged if the Elder " Brethren would take upon themselves the trouble of inviting Mr. Wigham to join " me on the 21st."

This arrangement will, I trust, be agreeable to the Board of Trade, and I am sure it will be conducive to the clearing up and final settlement of the question of the employment of gas in lighthouses.

I am, &c.,

C. Cecil Trevor, Esq. (Signed) JOHN TYNDALL.

Great Winchester St. Buildings, Old Broad Street,
London, E.C., 29th April 1873.

SIR,

AGAIN referring to your favour of the 3rd inst. and the letter which you sent to the Board of Trade dated the 28th ultimo,* on the subject of the experimental use of gas at High Haisbro' lighthouse, copy of which letter and its enclosures you were so kind as to transmit to me by the directions of the Elder Brethren of the Trinity House, I beg to say that I was so much surprised that the results of the investigations of the Elder Brethren respecting the comparative merits of gas and oil for lighthouse illumination should have been so very different from the results of similar investigations in Ireland that I thought it only due to myself, and to others whose written opinions on the subject have been laid before Parliament, to visit Haisbro' and make personal examination respecting those points in which there appear to be discrepancies between the results of the experiments of the Elder Brethren, and the conclusions of those who have for some years very closely observed the operation of the system of illuminating lighthouses with gas in Ireland. Accordingly, having business with Sir Richard Wallace, Bart., at Sudbourn, near Orton in Suffolk, I proceeded from that place to Haisbro'. I arrived there after sunset, and did not make my presence known to the lightkeepers till I had carefully compared the respective lights of the two lighthouses. The oil light at the Low lighthouse was in my judgment decidedly inferior to the gas light in the High lighthouse. I was not unprepared for this, for from your letter I learned that orders had been given to the keepers of the High lighthouse to use the 48 jet gas burner as the ordinary light, but the superiority of this burner over the oil lamp was not so great as had been observed when it was compared with the same oil lamp (your new improved Trinity lamp) at the recent experiments conducted by your Mr. Ayres at Howth Baily lighthouse near Dublin.† The reason of this was soon apparent, for on being admitted to the lighthouse I found that the tap of the 48 jet burner was only turned "*quarter on.*" On pointing this out to the lightkeeper, he informed me, *that he had orders not to turn on the tap to any greater extent.* When I turned on the full flow of gas to the burner, there was of course a large augmentation of the size and intensity of the flame. On inquiry I was informed that *during the recent experiments* described in your letter, *the same* quarter power was maintained in all the various sizes of gas flames which were experimented upon. This difference in the flow of the gas during the experiments at Haisbro', and at Howth Baily respectively will account for the discrepancy in the results, and was no doubt the reason that the Elder Brethren found that the light of the 48 jet burner was inferior to the oil lamp, that the 68 jet burner was just equal to it, and that the 88 and 108 jet burners were the only powers of the gas light which were its superior.

I had myself the opportunity of seeing the 68 jet burner turned fully on for a short time, and am perfectly satisfied that it largely exceeds in illuminating power the new and improved oil light at the Low lighthouse. I found the gas burners and lenticular apparatus in good order, but some of the talc cones appear to be deficient. The gas was burned at a lower pressure than usual, and it contained a slight trace of sulphuretted hydrogen and carbonic acid. These matters I need not say injuriously affected its illuminating power.

Before leaving the question of the illuminating power of the gas light at Haisbro' High lighthouse as compared with that of oil at the Low lighthouse, I may be permitted to refer to the extracts from the reports of the masters of the light-ships, which accompany your letter to the Board of Trade, and also to Mr. Emerson's report. I regret that the Elder Brethren should have forwarded these reports to the Board of Trade, because I think they are calculated to convey a wrong impression. It is evident they are unfavourable to the gas system, but on examination it will be seen that the facts given do not support this view. These light-ships' reports refer to comparisons made between the original form of oil lamp and the 28 jet gas burner, and assign a superiority to the former which it really does not possess and which the Elder Brethren themselves, setting aside these opinions from the light-ships, do not claim for it, but say "that from the observations at these light-ships the *equality* of the 28 "jet gas burner and of the first order colza oil lamp was fully established." These reports also make comparison between the gas light at Haisbro' and oil lights at other stations many miles distant. I venture to submit that such observations are of no practical value, because lights which are to be the subject of comparison must

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* Ante, p. 27.

† On that occasion the unanimous opinion of all the observers (more than 12 in number), and some of them well skilled in such observations, was that the 28 light burner at full power was equal to, and the 48 light burner much superior to this oil lamp.

be placed near to each other, so as to be viewed through an atmosphere of the same density, if an accurate conclusion is to be obtained respecting their relative powers of illumination. With respect to those portions of these reports, and the statement of Mr. Emerson to the effect that no increase of light has been observed during thick weather from the application of the fog burners in the High lighthouse, I may say, that I am not surprised that such opinions have been given, for on inquiry I find that the lightkeepers at the High lighthouse have nothing definite to guide them as to the precise time at which they should turn on the fog powers of this gas burner, and it is exceedingly probable that on the occasions referred to they did not discover that a fog existed till Mr. Emerson and the light-ship masters had finished their observations. The usefulness of these increased powers which gas enables a lightkeeper to apply in foggy weather has been abundantly proved in Ireland, and if at the High lighthouse the lightkeepers were directed continually to observe some particular specified light, and on its obscuration by fog immediately to apply a fog burner, I feel persuaded that the same good effects which have resulted elsewhere would not fail to be observed also at Haisbro'.

It is stated in Mr. Emerson's report that the keepers in the Low lighthouse have never observed "in a thick fog" even the least glimmer of a light from the High Tower "when the 108 jet burner is used." This is so directly contrary to my experience during a protracted series of observations of the effect of the turning on of the fog powers of the gas burner, that I can only suggest as a reason that the lightkeepers in the Low house being much occupied indoors attending to their oil lamps, and perhaps not having had positive orders to keep continually looking out at the High lighthouse, have not done so, and consequently have not seen its light. I was so struck with the singularity of this part of Mr. Emerson's statement, that when at Haisbro' I thought it right to inquire whether there was any practical seaman or other person qualified to judge, whose outdoor occupations would place him in the position of being likely to be able to form a correct opinion respecting the relative powers of the gas and oil flames. I was informed that an officer of the coastguard service was always on duty, and would be likely to give an intelligent opinion on the subject. I accordingly wrote to him and received the following reply:—

Haisbro' Coastguard Station,
April 18th, 1873.

Sir,—

In reply to yours of the 15th respecting the power of the High light which now burns gas, my opinion is that the ordinary light in clear weather gives a sharper and more powerful light than the ordinary oil light. Now, I will give you my reason for thinking so. I have walked these cliffs for 11 years, and I could always walk the cliff the darkest night there ever was; but since they have been burning gas at the above light, when walking towards it I am obliged to take another route as the light dazzles the eye, it being so sharp. The large fog burner is certainly very powerful, I have observed it in very thick weather, and it shows a light ray, or streams of light around it, when the light itself is not visible, but enough to show that there is a light in the locality. The big burner in moderately thick weather in my opinion has a great advantage over the oil lamp light.

Any more information that you may require from time to time, I shall feel it a pleasure to give you if you will communicate with me.

(Signed) Frederick William Godward,
Commissioned Boatman in charge, Haisbro'.

It will be seen from this letter that the very remarkable effect of the fog burners, which has always been noticed in Ireland, viz., the illumination of the fogs, has been observed by Mr. Godward, and it is probable that his observations have been made from a much greater distance than that between the Low and High lighthouse mentioned by Mr. Emerson.

Cost.—I found on my arrival at the Haisbro' High lighthouse that there was *no heat whatever* in the gas retort bench, the fire having evidently been out for a considerable time, and as there was but a small supply of gas in the gas holder it was at once clear to me that the manufacture of gas at Haisbro' was not conducted economically, for it could hardly be possible to raise the heat of the retorts to a sufficient degree of temperature within the comparatively short time which would elapse before a further supply of gas would be required for the use of the station, and I need hardly say that when gas is made from coals distilled at a low heat, much less gas is produced from a given quantity of coal, and much more tar than would otherwise be the case.

In the table of cost attached to your letter to the Board of Trade, the yield of gas at Haisbro' is set down at 7,000 cubic feet per ton of coals, whereas it is well known that 11,000 cubic feet per ton is generally produced from the particular kind of coal which you use at Haisbro'. But if the retorts be not kept up continually to the proper heat, it will no doubt account for the diminished production of gas. I consider therefore that the cost of gas at Haisbro' as shown by the table of cost which accompanies your letter cannot be considered a fair criterion by which to judge of the cost of the production of gas under proper management. Besides which I may say that the price of coal upon which your calculations are based is exceptionally high owing to the extraordinary increase in the price of coal at the particular time when you purchase it, and I would further observe that at all times Haisbro' is a very expensive station to supply with coal, being many miles from Norwich the nearest railway station, and far from any seaport.

Before concluding I would only further observe that the Elder Brethren are much misinformed when they are told that "every detail of the working of the gas manufacture at Haisbro' has been carried out with my cognizance and approval." I have had no opportunity of such supervision, and have not been at Haisbro' except on the occasion of my recent visit, the nature of which I have narrated above, since the time when I handed over the works to Mr. Douglass and the referees, when I certainly understood from them that the experiments then made were considered satisfactory, the referees at the same time informing me that they would report to that effect to the Board of Trade.

I have, &c.

Robin Allen, Esq., (Signed) JOHN R. WIGHAM.
The Trinity House, London.

P.S.—I forward a copy of this letter to the Board of Trade.

SIR, Trinity House, London, 16th May 1873.

I AM directed to acknowledge receipt of your letter dated 29th ult., referring to mine of the 3rd, which transmitted to you a copy of a communication and its enclosures, sent by me to the Board of Trade on the 28th March last, on the subject of the recent preliminary visit of the Elder Brethren to Haisbro' in reference to the experimental use of gas at the High lighthouse thereat; and in conveying to you the regret of the Elder Brethren that on so may points their experience and your own should differ, I am to submit the following observations.

The experiments at Haisbro' were undertaken as you are aware at the desire of the Board of Trade upon the cessation of the experiments in Scotland, with the view of obtaining further information as to the value of gas as a lighthouse illuminant, the Elder Brethren stipulating in order to avoid controversy that the gas referees of the Board of Trade should determine all points connected with the plant, materials, manufacture, cost, and application of the gas, the Elder Brethren themselves judging of the value and advantages of the light produced as compared with those from other sources of illumination; and it is now proposed that after the referees have presented their report, the Elder Brethren, accompanied by Dr. Tyndall, should make the investigation to which their recent visit was but preliminary, and it appears to them that the fairest course to pursue and the one most calculated to yield an unbiassed and satisfactory solution of the question, will be that at any time during the referees' examination, or the Brethrens' investigation, you should have free access to the lighthouse and be enabled to offer such suggestions as you may deem advisable in the interests of yourself and those you represent. At the same time, the Elder Brethren having caused the necessary enquiries to be made at Haisbro' by the Corporation's officer, Mr. Emerson, think it right to correct several inaccuracies into which, from your letter, you appear to have fallen. For example, you say that the lightkeeper informed you "that he had orders not to turn on the tap to any greater extent" than quarter on. On this point the keepers deny having said their instructions were to burn quarter-cock only. They state that they have always tried to show the best light according to instructions given to them by your Mr. Hossack; and that the reason they do not usually turn the cock fuller on is, because in that case reddish flames are produced which rush up the chimney with great heat, and because the additional height of flame gained by so turning on gives no more illuminating power; the additional flame being in the tall cylinder, out of focus, and nearly valueless. You state also that you were "informed that during the recent experiments the same "quarter power was maintained in all the various sizes of gas flames which were

" experimented upon." Upon which I am to acquaint you that the lightkeeper in charge on the night of the experiments says that for the 28 burner "full cock" was on, and for all the other grades one third cock, as giving the best results. Again you say "The lightkeepers at the High lighthouse have nothing definite to " guide them as to the precise time at which they should turn on the fog powers " of their gas burners," on which I am to observe that the keepers of each lighthouse have been instructed to use the other lighthouse as a fog mark, and did so before the establishment of gas, and in their monthly weather returns there is a column for denoting the visibility of the other light; I am also to state that the keepers at the High light say they pointed out to Mr. Wigham that they used the Low as a fog mark.

As respects Mr. Godward's letter, and your remarks as to the power of the gas light in foggy weather, I am to say that by common testimony it is admitted that at close quarters the gas light is more dazzling than the ordinary oil light, but there are plenty of observers in the neighbourhood who state that this power extends to a very short distance. This, however, is part of the question to be determined together with the gas light's penetrative powers in fog *pari passu* with its cost, &c.

Finally, as to your statement that you "found no heat whatever in the gas retort " bench, the fire having evidently been out for a considerable time, &c.," the Elder Brethren are informed that the fires are obliged to be let out sometimes when the gasometer is full, and as it is not necessary to keep on making gas when not wanted, it would seem more economical to let the fires out, more especially in the summer time, when with short nights it would probably be necessary to make gas only twice a week.

The Elder Brethren desire in conclusion to state that they do not profess to be acquainted with or to offer an opinion upon the details of the manufacture of the gas, and that neither they nor their officers have given any orders to their keepers in regard to its actual production. They believe the lightkeepers have acted with a sincere desire to do justice to the light, and have carried out your instructions to the best of their ability, but if the directions given either by yourself or through Mr. Hossack have not been carried out entirely to your satisfaction, it would seem to the Elder Brethren to be one of those contingencies attaching to the use of gas which must be taken into consideration in forming a judgment upon its value as a lighthouse illuminant.

I am, &c.

J. R. Wigham, Esq. (Signed) Robin Allen.
&c., &c., &c.

Board of Trade (Harbour Department),
Sir, Whitehall Gardens, S.W., 19th May 1873.

With reference to previous correspondence on the subject of the use of gas for lighthouse illumination at Haisbro', I am directed by the Board of Trade to state that the Elder Brethren have called the attention of this Board to an arrangement which was come to when this experimental trial of gas at Haisbro' was undertaken, to the effect that the gas referees should be judges upon all points connected with the materials, manufacture, and cost of the gas, and to the fact that down to the present time the gas referees have had every detail of the plant and working under their cognizance and approval.

The Elder Brethren in drawing attention to this arrangement have requested that upon the present occasion they may be furnished by you, as a gas referee, with a report upon the materials, manufacture, and cost of the gas used at Haisbro', and they propose that upon the receipt of such a report you should accompany them, in your capacity of scientific adviser to the Corporation, in a series of careful observations which they intend making afloat, with the view of determining the relative value of this gas as a lighthouse illuminant.

The Board of Trade request therefore that you will favour them at your earliest convenience with a report embracing the various points upon which the Elder Brethren desire information.

I am, &c.

Professor Tyndall, F.R.S., (Signed) C. Cecil Trevor.
Royal Institution, Albemarle Street.

SIR, 33 to 36, Capel Street, Dublin, 5th July 1873.

I HAVE to thank you for your letter of the 16th ult., 3041, respecting the use of gas at Haisbro' high lighthouse.

You inform me that gas was applied at Haisbro' at the desire of the Board of Trade, the Elder Brethren stipulating that the referees of the Board of Trade should determine all points connected with the plant, materials, manufacture, cost, and application of the gas, the Elder Brethren themselves judging of the value and advantages of the light produced.

You further state that it is now proposed that after the referees have presented their report, the Elder Brethren, accompanied by Dr. Tyndall, should make the investigation to which their recent visit was but preliminary.

I desire to express my gratification that the Elder Brethren, accompanied by Dr. Tyndall, should propose to make their investigation, and I feel sure that when they give more time to the subject, some points respecting the superiority of gas, about which at their last visit the Elder Brethren were doubtful, will be cleared up to their entire satisfaction. But as regards the referees the Elder Brethren will remember that more than a year ago I met the referees at Haisbro', when those gentlemen, according to the stipulation above referred to, made their inspection, and I have since learned that they presented their report in June of 1872. I am not aware of the contents of that report, but have reason to believe, as stated in my last letter, that it was favourable to the gas light, and if not inconsistent with your rules, I should feel much obliged by your furnishing me with a copy of it, and I think that as the previous correspondence has been transmitted to the Board of Trade, it would be only fair that this report of the referees should be also laid before that Board; perhaps, however, this has already been done. As the Elder Brethren intend to make further experiments at Haisbro', it may perhaps be unnecessary for me to make any lengthened reply to the several paragraphs in your letter which refer to the remarks on my last, respecting my visit to Haisbro' last April, but I cannot permit the opportunity to pass without saying that I fully admit that the light keepers have always appeared to me to do justice to the gas light; but they are entirely mistaken if they now suppose that they improve the light by not leaving the cock turned full on with all the powers of the burner, and in thus reducing the supply of gas, they are certainly not carrying out instructions received either from me or from my foreman, Mr. Hossack.

With respect to your observation that the light keepers of each house at Haisbro' have orders to use the other lighthouse as a fog mark, I may say that I had no communication with the keepers on the low house, and have no recollection of having been informed at the High lighthouse that the other house was used as a fog mark. You are aware that the *dark* side of the low house faces the High house, and this fact would naturally lead me to pay but little attention to any remark which may have been made as to its usefulness as a fog mark.

As respects the effect of the high powers of the gas light in foggy weather, you say that by common testimony it is admitted that at close quarters the gas light is more dazzling than the ordinary oil light, but that there are plenty of observers in the neighbourhood who state that the power extends to a very short distance. I have long since satisfied myself, by careful and repeated observations, that this superiority of the gas light is *not* confined to short distances, and have delayed sending you this letter in order that I might obtain fresh confirmation of my experience from Capt. Hawes, R.N., Inspector of Irish Lights, who has recently had observations made of the effect of the fog burners at Howth Baily lighthouse, as compared with the ordinary gas burner placed in the experimental house at that station; this ordinary burner is visible in clear weather at Wicklow Head, a distance of 27 miles. It appears from those observations that not only was the fog power light always considered superior to the ordinary light, but in thick weather there were instances in which it was visible when, owing to the density of the fog, the ordinary light could not be seen. To the Elder Brethren, who have so long and so anxiously been labouring to obtain a light possessing this power of penetrating fogs, I need not point out the advantage it presents for all maritime interests.

The Elder Brethren have misunderstood the point of my remark respecting the fact of the fires being out (at Haisbro') in the gas house when I was there. What I object to is not so much that the fire was allowed to go out when the supply of gas in the gasholder was sufficient, but to the fact of its not being re-lighted in sufficient time to allow of the proper and economical manufacture of the gas when a further supply is required, as was the case when I happened to be there. The yield of gas per ton

of coal, which you furnished to me, is a conclusive proof of want of care in the gas-making department.

I fully concur in the remarks of your concluding paragraph, but you will admit that it surely requires no extraordinary skill in a light-keeper to turn the gas main cock full on when necessary; nor is there any extraordinary attention required on the part of the gas-maker in order to avoid making gas with half-heated retorts. In the five lighthouses now burning gas for some years in Ireland, no difficulty has been found by the light-keepers in regulating the gas burners or by the labourers making the gas, in attending to the very simple rules laid down for their guidance.

As on the previous occasion, I send a copy of this letter to the Board of Trade.

I am, &c.

Robin Allen, Esq.,
Trinity House, London.

JOHN R. WIGHAM.

SIR, Trinity House, London, E.C., 23rd July 1873.

MR. WIGHAM having requested, with reference to the experiments with gas at Haisbro', that a copy of the enclosed report by the gas referees, dated 28th June 1872, should be forwarded to the Board of Trade, I now beg to enclose the same explaining that the Elder Brethren have hitherto assumed that a copy was furnished to your department at the time directly from the referees.

I am, &c.

The Assistant Secretary,
Harbour Department, Board of Trade.

ROBIN ALLEN.

Enclosure in foregoing letter.

GENTLEMEN, 28th June 1872.

LAST week we visited the Haisbro' lighthouse in company with Mr. Douglass and Mr. Wigham, and inspected the gasworks there. We found them in a most satisfactory condition and constructed in accordance with the specification submitted to us by you last year as amended and finally approved by us. We pointed out some improvements which might be made in the arrangement of the purifying material.

At night we went northward along the coast to a point where observation of the rival gas and oil lights could be made. The place was about one mile from the upper lighthouse, where the various powers of the gas burner were successively exhibited and about a mile and a quarter from the lower lighthouse where the ordinary oil lamp was in use. In the opinion of Mr. Patterson, who watched the rival lights very closely, the light given by the highest power of the gas burner (*i.e.*, with 108 jets) was to that of the oil lamp as $4\frac{1}{2}$ to 1. Mr. Pierce did not consider that the circumstances under which our observations were made justified a definite conclusion as to the relative illuminating power of the two lights. The gas was supplied to the burner under $2\frac{1}{5}$ inches pressure, and the consumption of gas at the highest power was about 240 feet per hour.

Judging from the very different results obtained, as Mr. Wigham informed us, when the rival lights were tried in a photometer, as well as from general consideration, we think it highly probable that there is a difference in the penetrating power of the rays from different kinds of light, and that when gas and oil lamps are tried against one another, different results may be obtained at different distances. We think it advisable therefore that the gas and oil lamps at Haisbro' should be inspected from the sea at various distances, and should you desire it, we will be happy to join you in making such observations. In regard to the important question of the relative cost of gas and oil as used in lighthouses, we consider that this question cannot be satisfactorily answered until after a six months' trial of gas in the upper lighthouse, a minute record being kept of the hours during which each of the several powers of the gas burner is employed, and also, of course, of the working expenses, cost of materials, &c. When these data are obtained we will be happy to report to you thereon.

We are, &c.

The Elder Brethren,
Trinity House.

(Signed) JOHN SAMPSON PIERCE.
R. A. PATTERSON.

Sir, Royal Institution, 16th October 1874.

In compliance with the desire of the Board of Trade, that I should furnish them with a report upon the materials, manufacture, and cost of the gas used at Haisbro', I beg to inform you that soon after the receipt of the letter of the Board I entered upon the desired investigation.

My first care was to secure the services of a gas analyst of proved trustworthiness, whose previous experience had rendered him intimately conversant with photometric measurements, and with all the processes employed in the manufacture of gas. Such an aid I found in Mr. William Valentin, principal demonstrator of chemistry in the Royal College of Chemistry, South Kensington.

In 1873 Mr. Valentin, at my request, went to Haisbro' and made himself acquainted with the condition of the gas-works.

He furnished me with full particulars as to the yield and quality of the gas then produced, and as to its cost of production. It was obvious, however, from Mr. Valentin's report that no conclusion of any value to the Elder Brethren or the Board of Trade could be drawn from the data then obtained. The flues had been suffered to fall into ruin, and before the desire expressed to me by the Board of Trade could be met, thorough repair was necessary.

If such a state of things could be proved to be a necessary or even probable incident in the manufacture of gas for lighthouses, the use of this illuminant would, of course, be at once put an end to; and I thought the onus rested on Mr. Wigham to prove that it was not a necessary incident.

After consultation with the Elder Brethren to whom I represented the desirability of avoiding the expenditure of time, money, and good temper in subsequent controversy, and who fully appreciated my motives, it was agreed that the repair of the works should be carried out under Mr. Wigham's own superintendence, and that after he had certified their completion, the inquiry demanded by the Board of Trade should be made.

That inquiry has now been carried out in as complete and searching a manner as the data at my disposal rendered possible.

In regard to the "materials, manufacture, and [in part] cost of the gas," I have the honour to refer to the report of Mr. Valentin which is herewith transmitted.

In this inquiry the comparative merits of gas and oil were brought into question. The case of the oil was represented by Mr. Douglass, the performance of whose lamps was investigated. The case of the gas was represented by Mr. Wigham. It was my desire that everything should be done with the joint concurrence of these two gentlemen. They were therefore present, and I am happy to say that Mr. Valentin has efficiently carried out my wishes to make the investigation amicable, and, as far as possible, final.

With a view to observations afloat, in accordance with previous arrangement I proceeded to Yarmouth on the 31st of March, and joined Capt. Webb, Capt. Nisbet, and Admiral Collinson on board the "Galatea." On Wednesday the 1st of April we all went by land to Haisbro', inspected the gas-works, and made ourselves acquainted with the very admirable arrangements of Mr. Valentin for the determination of the quality and consumption of the gas. We afterwards visited the Lower lighthouse, and saw in action the 6-wick burner, consuming colza oil. The shifting of the oil lamp from the 6-wick to the 4-wick, on the same night, not being deemed practicable, we decided to occupy the first night with a comparison of the 4-wick oil lamp with the various powers of the gas burner.

It was arranged that Mr. Wigham should satisfy himself as to the quantity of oil consumed, and that Mr. Douglass should satisfy himself as to the quantity of gas consumed.

We returned to Yarmouth and went afloat. Our observations were made from two positions, the one four miles, and the other eight miles distant from Haisbro'. Care was taken by the Brethren on board to make these positions equidistant from the two lights.

From both positions the 4-wick lamp and the 28-jet gas burner were first compared together. As regards volume, both lights were alike; as regards intensity, a slight

advantage might have been possessed by the gas; but they were practically equal in power.

The 48-jet burner in both positions yielded a light decidedly superior to the 4-wick lamp. The 68-jet burner markedly exceeded the 48-jet one, and showed an exceedingly fine light.

The 88, 108, and 148-jet burners were then tried in succession. With regard to the last of these, no advantage is likely to arise from its use that would justify the expenditure of gas necessary to maintain it. In my opinion 108 jets mark the practical upper limit of the Wigham burner.

In the lower powers of the burner the augmentation of light consequent on the addition of twenty jets is, of course, most marked to the eye. The ratio of 48 to 28, for example, is much greater than that of 108 to 88. At Haisbro', however, the advance of light with the higher powers appeared to be less distinct than at Howth Bailey.

Ten minutes were allowed for the observation of each burner. During the first five the flame was steady, during the subsequent three minutes it was broken up into flashes of five seconds duration, separated from each other by intervals of darkness of three seconds. These flashes were very effective and quite characteristic. With the 68-jet burner they were exceedingly fine. One peculiarity in the case of the gas must here strike every mind. By the employment of flashes with equal intervals of light and darkness, it is possible to have the intensity of 68 burners concentrated into every flash, with an expenditure of gas not much greater than that required for a 34-jet fixed light.

During the intervals of darkness no gas is consumed. No other light, to my knowledge, is capable of being thus saved by the process which confers upon it individuality.

On the night of the 1st, the programme was carried out with extreme accuracy. In the case of the flashes, the turning on and off of the gas was done by hand, and though less perfect than the performance of machinery, the work was surprisingly well done. On the 2nd, Capt. Nisbet and I drove to Haisbro', and assured ourselves that everything had proceeded in a satisfactory manner during the previous night. After giving some further instructions we returned to Yarmouth and went afloat.

The wind was very boisterous, and as the observations of the preceding night were of precisely the same relative character at the 4-mile and the 8-mile position, we contented ourselves on the 2nd with observations from the nearer station. The 6-wick Trinity lamp was burnt on this occasion in the Lower lighthouse. Compared with the 28-jet burner the 6-wick lamp proved the superior light.

Compared with the 48-jet burner, the 6-wick lamp proved to be of practically the same intensity. Mr. Brown, the master of the "Galatea," thought the gas best, and Capt. Nisbet also thought it possessed a little more body than its rival. But the two lights may be safely regarded as of sensibly equal power. The 6-wick lamp yielded a very fine light; it is distinctly the most powerful oil light that I have ever seen. The 4-wick lamp also yielded a pure and beautiful light. Our experience of the higher powers of the gas burner on the 2nd, was precisely the same as it had been on the 1st.

As landward reflectors are not a normal element of dioptric apparatus, I drew the attention of my colleagues to the fact that the reflectors at Haisbro' are exceptionally large, and submitted to them whether a night's observations ought not to be made with the two reflectors suppressed. But the experiments being deemed definite and satisfactory it was thought unnecessary to extend the observations. The results, moreover, are so thoroughly borne out by previous experiments in Ireland that they may safely be relied on.

With regard to the question of cost, the comparison will be limited to the 28-jet burner and the 4-wick lamp, and the 48-jet burner and the 6-wick lamp. Though the light of the latter is very fine, its excess of cost over the 48-jet burner will probably interfere with its employment. As regards the question of cost, I am not in possession of the entire data, and those before me show discrepancies between certain items furnished by the Trinity House, and those furnished by Mr. Wigham. The Elder Brethren, however, desire to work out the question of cost themselves, and in their hands I therefore leave it. But over and above the question of cost, the capacity of varying its power and of conferring unmistakeable individuality upon a light, which the gas possesses in so eminent a degree, is a point of the highest importance. I have dwelt emphatically upon this point in former reports to the Board of Trade, and I venture to employ the same emphasis now. A fixed light a long way off and a ship's light close at hand may be absolutely undistinguishable;

and under such circumstances the coast light virtually ceases to be a guide to the mariner. Cases, I doubt not, will occur to the Elder Brethren in which the absence of all distinctive character on the part of coast lights proved to be a source of perplexity and danger. This defect will increase in gravity as our coast lights become more numerous and our ships' lights more improved. Hence I hold it to be of vital importance that every suitable means of bestowing a character upon a light, which should render its being confounded with any other light impossible, should be taken advantage of. No light hitherto devised can, in this respect, bear comparison with the gas-light. The method of conferring individuality upon a light by destroying two thirds of the beam with a shade of coloured glass is doubtless necessary in some situations; but it is a necessity to be deplored; and where distinctiveness can be attained by a *distribution* of the light, not involving its *destruction*, the method commends itself to common sense.

The gas is perfectly pliant and manageable. At the appointed hour of sunset it flashes out with full power in an instant, whereas the oil lamp requires half an hour's nursing before its maximum power is attained.

The keepers like the gas. I questioned the assistant keeper at Haisbro', a most intelligent man, who was at this lighthouse when oil was employed, and who has been there ever since the introduction of the gas. He has never experienced the slightest difficulty in managing it; he never had an accident of any sort with it; in case of manipulation it has the advantage of the oil; while the change from burner to burner in the case of fog may be accomplished in a fraction of a minute. In the 6-wick oil lamp, by an ingenious device, the three inner wicks may be suppressed, and the three outer ones employed; and in thick weather it is possible to pass from three wicks to six wicks. But for the lamp to recover its power after this change, a quarter of an hour at least is requisite, while the augmentation of power is insignificant compared with that attainable in less than a minute with the gas.

I have received a copy of the brief but lucid report of the Committee with whom I had the honour to act at Haisbro', and notice with satisfaction that the flashing experiments so far pleased them that they recommend further experiments on the flashes. I think the result will prove to the Elder Brethren that in gas we have an illuminant of extraordinary power and of unrivalled individuality.

But Haisbro' being a fixed light, is not able to bring out all the virtues of the gas. Its applicability to revolving lights, and its power of producing perfectly novel modifications of such lights, have been demonstrated by conclusive experiments at Rockabill, for an account of which I beg to refer to the reports which I have already submitted to the Board of Trade.

When first honoured by the commands of the Board to go to Ireland and report on the applicability of gas to lighthouse illumination, I knew nothing of Mr. Wigham or his work. But I soon discerned in him a man of ability, energy, and fruitfulness of invention; and I deemed it in the highest degree desirable that these qualities, instead of being overshadowed by discouragement, should have free but prudent scope in the public service. Every recommendation which I have ventured to forward to the Board of Trade regarding him and his work was based upon the careful consideration of antecedent experiments; and I venture to think that every one of them has been justified by the result. The recent investigation at Haisbro' has not altered the conviction that I have long entertained and expressed, that in the introduction of gas a great step has been taken in the art of lighthouse illumination.

I have the honour to be, &c.

Robin Allen, Esq.,
Trinity House.

(Signed) JOHN TYNDALL.

P.S.—I beg to add here an observation of importance, an account of which has just reached me. I may be permitted to introduce it by reference to a passage in my report to the Board of Trade, dated 25th July 1873:—

"Fogs vary in density, and between our densest fog and our clearest air there are infinite gradations. It is not sound reasoning to conclude that because in a dense fog weak lights and strong are alike extinguished, all lights are equally valueless as regards fog. For there are states of the atmosphere when it is of the highest importance that the mariner should see his light, and when if a low power be used he will not see it, while if a high power be used he will. It is in the commonest forms of 'thick' weather that the superiority of a strong light would be most evident."

"I have already stated that the triform flash, which occurs at Rockabill once in a revolution, is superior to the seven other flashes.

"Reasoning alone would lead us to conclude that with a gradually thickening atmosphere the feebler flashes would disappear first, the strong beam of the triform making itself useful after the others had ceased to be so. This is proved by observations made from the Hill of Howth, and from the 'Kish' lightship. At all times when the light is seen, one flash in eight is paramount, but on many occasions the seven minor flashes disappeared altogether, the eighth flash alone being visible."

The observation which I have now to cite is a striking confirmation of those here referred to. It was made by Sir William Thomson from the Salthill Hotel on the 21st of last September. Speaking of the performance of the triform light, he says:—"The triform light exhibited from the lower position in the neighbourhood of the "chief tower was strikingly superior even to the great fog power of 108 burners "exhibited in the chief tower, so much so that a heavy thunder-shower which "happily chanced to pass during our experiments between the Salthill Hotel and the "lighthouse completely eclipsed the light of the chief tower, while the triform still "shone conspicuously through it." The superiority of the triform over even the 108-jet burner being thus marked, its enormous superiority over the 28-jet burner, or its equivalent 4-wick lamp, may be inferred.

With regard to what I have called the "flexibility" or "plasticity" of the gas, Sir William Thomson expresses himself thus:—"On the evening of the 21st of September, and in the experimental trial of distinctive eclipses on the evening of the "22nd, I was much pleased with the admirable 'plasticity' of the gas illumination, "in respect to the system which I have urged of giving distinction to different lights "by combinations of short and long eclipses in accordance with the principles of the "Morse alphabet."

The Board of Trade is already in possession of my statement that by proper combinations of flashes a lighthouse might be made to spell its own name.

J. T.

Royal College of Chemistry, South Kensington,
30th April 1874.

SIR,

I BEG to report to you on the experiments conducted by me at the Haisbro' High lighthouse on Wednesday, Thursday, and Friday, April 1st, 2nd, and 3rd.

I put myself in communication with Mr. Wigham and arranged with him (1) that a small 100-inch bar Bunsen photometer should be fixed for testing the illuminating power of the gas, likewise a large 36-feet bar Bunsen photometer, accurately divided into feet and inches, for measuring the light given by the new gas burner; (2) that the powerful light from the Wigham burner should be tested against a light greater than that produced by one or two sperm candles, viz. against a gas burner; (3) that all necessary provision should be made for burning the gas as nearly as possible under conditions similar to those pertaining to the burner in the cupola of the lighthouse.

From the information I received from you I prepared for examining (1) into the state of the gas-works at Haisbro' lighthouse, which in accordance with my recommendations of last summer had since been put into thorough repair, and to which a station meter had been added for registering and controlling the manufacture of the gas; (2) for ascertaining the illuminating capacity of the different powers of the Wigham burner; (3) for controlling on land the experiments you and the Light Committee of the Trinity House were proposing to conduct at sea on the nights of Wednesday and Thursday on board the "Galatea" steam yacht; (4) for reporting on the comparative consumption of gas by the Wigham burner and of colza oil by the new 4 and 6-wick Trinity lamps, and on the respective cost of the two sources of light.

I arrived at Haisbro' lighthouse on the morning of Wednesday April 1st, where I met Mr. Wigham and Mr. Douglass, and was pleased to find that my instructions had been carried out in a most intelligent and careful manner by Mr. Wigham, and that everything necessary to conduct the experiments successfully had been provided for. On your arrival soon after in company with the gentlemen of the Light Committee, I had the satisfaction to find that the visiting committee were satisfied with the improved state of the gas-works and entirely approved of the testing apparatus which I had placed in the basement of the lighthouse tower in readiness for the experiments.

I had given instructions that a quantity of gas should be made and stored up in the gas holder sufficient to last for the day's experiments. I at once proceeded to ascertain the illuminating power of the gas most carefully by means of the small 100-inch rod photometer. A fish-tail gas burner delivering four cubic feet of gas and giving a fine

spreading flame was employed. Its light was measured with great facility against two sperm candles, weighed whilst burning, and the consumption of sperm was corrected to the standard employed in this country, viz. the sperm candle consuming 120 grains per hour.

The following were the results obtained :—

Consumption of gas - - - -	4 cubic feet per hour.
Illuminating power - - - -	27.24 candles.

To facilitate the photometric measurement of such powerful lights as are produced by the different powers of the Wigham burner, Mr. Wigham had at my desire provided a rather more powerful test burner, and a second photometer rod had been placed at an angle to the first for the transferment of the primary photogenic standard. In this manner the light of the 4 cubic feet fish-tail burner could be readily compared with that of a burner similar in construction to the large Wigham burner, but consisting of only 10 fish-tail (No. 2) gas jets, burning without chimney. This burner was found to give 2.61 times the light of the fish-tail, or $2.61 \times 27.24 = 71.09$ sperm candles. It was thus possible to retain the familiar unit of photometry, viz., the sperm candle consuming 120 grains of sperm per hour, and yet to avoid the difficulty of directly comparing most powerful lights with so insignificant a light as that yielded by one or at best two sperm candles.

Against this intermediary burner, giving in round numbers the light of 71 sperm candles, I had fixed the Wigham burner. The two were separated by a photometer rod, 36 feet in length, graduated to indicate directly the photogenic result by multiplying the figures marked on the rod with 71·09, as well as in feet and inches. The results read off by the latter scale had merely to be squared, and the proportional photogenic expression to be found by dividing one square number into the other, the absolute, by multiplying, as before, the quotient thus found with 71.09. Hence the two readings checked each other, and at the same time verified the divisions made on the large photometer rod. The disc used was about one foot in diameter and was fitted in a readily moveable blackened wooden box, about 3 feet in length. Various designs and traceries of great delicacy on the usual paper disc had been prepared which facilitated the photometric work considerably. In fact, every precaution had been taken to accurately measure this formidable light. The burner had been placed a few feet above the floor of the tower of the lighthouse. A short mica and an iron chimney, about 10 ft. in length, and discharging into the upper part of the tower, conveyed away the noxious products of combustion and created a powerful draught, such as is necessary to lights placed in the cupola of lighthouses. A governor regulated the supply of the gas. A large and delicately constructed meter, having a drum capacity of five cubic feet, indicated the consumption of gas by the revolutions of a minute hand as well as by the permanently registering hands; the consumption was controlled by independent observers, by both means, and the readings were found to be remarkably concordant. As far as foresight could provide, nothing had, in fact, been left undone to secure good photometric measurements. It gives me pleasure to acknowledge the very intelligent and painstaking manner in which Mr. Wigham had carried out all my directions.

Description of Gas Burner.—Before recording the results of the photometrical testings it may be well to describe, as far as can be done, without drawings, the construction of the burner, from data collected by myself and information received from Mr. Wigham.

The gas burner devised and perfected by Mr. Wigham consists of a number of fish-tail gas jets arranged in concentric rings, and set in narrow upright metal tubes, about 5″ in height, fixed in a flat circular hollow metal chamber of cast brass. This chamber is connected from the bottom with the gas supply by means of a mercurial lute or valve, and can be lifted off with the greatest ease, in case of accident, when an ordinary oil lamp used in dioptric apparatus may be substituted for it. 28 of these gas jets set in three concentric rings, respectively of 4, 8, and 16, constitute what Mr. Wigham terms his 1st power burner. The admission of the gas to the metal chamber is controlled by a micrometer cock, placed on the standard gas pipe, leading to the mercurial cup. As the pressure under which the gas is supplied to the burner is necessarily great ($2\frac{1}{2}$ inches water pressure), it has been found conducive to a higher photogenic effect to check the flow of the issuing gas by the well-known contrivance of having a small lava-cone, bored with fine holes in the lower part of the narrow upright delivery tubes, and a lava-tipped fish-tail burner at the top. Lights of considerably increased illuminating power are obtained by Mr. Wigham by severally adding to his 1st power burner concentric ring chambers, made in two halves, containing an additional number of 20 fish-tail jets, and which can be connected with the utmost facility, in the manner

already described, with a separate gas supply for each chamber. It is obvious that when the different burner powers are once adjusted, a move of the micrometer cock turns on the gas, or shuts it off almost instantaneously from one or the several powers either partially or entirely, and that this gas burner is, therefore, pre-eminently suitable for producing signal or flashing lights.

The burner which I examined at Haisbro' is constructed for lights of six different powers; viz.—

1st power,	or 28	jets of	No. 1	fish-tail burners.
2nd "	48	"	2	"
3rd "	68	"	2	"
4th "	88	"	5	"
5th "	108	"	5	"
6th "	148	"	5	"

The respective diameters of these circles, are $3\frac{1}{2}''$, $5\frac{1}{2}''$, $7''$, $8\frac{3}{4}''$, $10\frac{1}{2}''$, and $12\frac{1}{4}''$. The openings in the lava-cones within the tubes are somewhat larger for the higher power lights.

To produce the necessary combustion, different sized moveable chimneys, made of thin transparent mica plates, rivetted together, are employed. These terminal chimneys can be readily attached to a similarly constructed stationary flue of uniform width and height, which is in its turn connected with an iron flue, about 11 feet in height. This conveys the products of the combustion into the open air; a damper in the iron flue regulates the draught. The following are the dimensions of the different terminal chimneys:—

	Width.		Height.
	below	above	
1st power	$3\frac{1}{2}''$	$4\frac{1}{2}''$	$8\frac{1}{2}''$
2nd "	$4\frac{1}{2}''$	$6\frac{1}{2}''$	$7\frac{1}{2}''$
3rd "	Do.	Do.	Do.
4th "	$8\frac{1}{2}$	$9\frac{3}{4}$	$5\frac{1}{2}$
5th "	Do.	Do.	Do.
6th "	Do.	Do.	Do.

The stationary mica flue is $10''$ wide and $16''$ high; from these dimensions of the terminal chimneys it follows that the different sized flames must become unequally contracted, and that varying amounts of atmospheric air are supplied through the chimneys to the flame, which must cause increased or decreased combustion. This is actually borne out by the corresponding results of the photometric testings of the different powers, as will be shown below. The distance from the top of the fish-tail burners to the inlet of the terminal mica plate chimneys varies with the different powers, viz., $3\frac{1}{2}$, $4\frac{1}{2}$, $5\frac{1}{2}$, $6\frac{1}{2}$, and $7\frac{1}{2}''$ respectively. It appears to me that the shape and intensity of the flame which is primarily dependent upon the size of the burners is greatly influenced also by the height at which the chimneys are placed from the burner.

Photogenic Results.—Each power was tested by me photometrically with the gas which had previously given me the light of 27.24 candles for every 4 cubic feet consumed. 10 observations were taken during each series of experiments. Both Mr. Wigham and his representative Mr. Edmondson, and Mr. Douglass had ample opportunity given to them to satisfy themselves of the correctness of the photometrical readings and of the consumption of gas per burner power. The testings were carried out without the least hitch and passed off to the satisfaction of everybody concerned in it.

I subjoin in a tabular form the results I obtained:—

Table showing Photometrical Results obtained with the Wigham Burner.

Power of Burner.	Illuminating Power in Sperm Candles, consuming 120 Grains per hour, Mean of 10 Observations.	Hourly Consumption of Gas in Cubic Feet.	Illuminating Power produced by one Cubic Foot of Gas.	Illuminating Power produced by one Fish-tail Jet.	Cubic Feet of Gas consumed per Fish-tail Jet.
1st power, or 28 jet burner	429.6 candles	51.4 cub. ft.	8.36 candles	15.34 candles	1.835 cub. ft.
2nd " 48 "	832 "	93.2 "	8.92 "	17.33 "	1.94 "
3rd " 68 "	1253.18 "	146.3 "	8.57 "	18.43 "	2.15 "
4th " 88 "	2408 "	244 "	9.87 "	27.36 "	2.77 "
5th " 108 "	2923.4 "	308 "	9.43 "	27.07 "	2.85 "
6th " 148 "	3136 "	420 "	7.46 "	21.19 "	2.83 "

It follows from these figures, (1), that when gas is burnt in large quantities by this powerful burner it produces *proportionally* more light than can be obtained by burning it in an ordinary fish-tail, batswing, or argand burner; for power 4, ex. gr., gave nearly 10 candle light for every cubic foot of gas consumed, equal to an illuminating power of close upon 40 candles, instead of 27.24 for 4 cubic feet of gas. In fact the least perfect combustion, owing in all probability to an insufficient supply of atmospheric air, as exemplified by power 6, viz., 7.46 candle power for every cubic foot of gas consumed, gives still higher results than that produced by the test fish-tail burner I employed. It is clear, then, that there is a considerable advantage in burning gas from powerful burners. (2), that a better photogenic effect is produced by powers 2 and 3 than by power 1, likewise by powers 4 and 5 than by power 6. This is owing, in my opinion, to the greater indraught of air, dependent upon the terminal mica chimneys. Powers Nos. 2 and 4 are in fact more economical than powers 3, 5, or 6.

Cost of maintaining the Wigham Burner.—In order to arrive at a sound and fair estimate of the cost of manufacture, after satisfying the visiting Committee that the gas-works had been placed by Mr. Wigham in thorough working order, I came to an understanding with Mr. Douglass and Mr. Wigham that a fortnightly return of the gas-maker, according to a tabular scheme (comp. Appendix C.) which I drew up, should form the basis of my calculations. I have this return now before me, signed by Mr. Kelsey, the principal light-keeper. From the figures contained therein it follows that on an average 10,500 cubic feet of gas were obtained from one ton of cannel coal. In addition to the coke and tar obtained there were used 8 cwt. of banking (breeze) coal for effecting the distillation of 1 ton 9 cwt. and 1 qr. of cannel coal. The price of Marquis of Lothian's cannel coal, inclusive of delivery at Haisbro' lighthouse, amounts to 2*l.* 17*s.* 6*d.* per ton; that of the common banking or breeze coal to 1*l.* per ton. The wages paid to one gasmaker are 18*s.* per week. The lime necessary for purifying the gas, equal to 5 per cent. of the coal carbonized, costs at Haisbro' 19*s.* per chaldron (36 bushels). The interest on 1,685*l.* 6*s.* 9*d.* capital (these figures are based upon an official statement I received from the secretary of the Trinity House; they include, however, some incidental expenses which would probably not occur again in establishing another gas station), or money disbursed for plant and other expenses in establishing the lighthouse as a gas station, amounts to 67*l.* 8*s.* 3*d.* The cost of manufacturing gas may thus be readily arrived at, as follows:—

	Burner Powers.					
	1.	2.	3.	4.	5.	6.
Hourly consumption of gas in cubic feet	51.4	93.2	146.3	244	308	420
Yearly consumption of gas during 4,412 hours in cubic feet	226,777	411,198	645,475	1,076,528	1,358,896	1,953,040
Tons of cannel coal required to be carbonized	21.6	39.16	61.47	102.52	129.42	186
Cost of cannel coal at 2*l.* 17*s.* 6*d.* per ton	£ s. d. 62 2 0	£ s. d. 112 11 8	£ s. d. 176 14 6	£ s. d. 294 15 0	£ s. d. 372 1 6	£ s. d. 534 15 0
Tons of breeze coal required (2 qrs. per day) for two daily charges of 1½ cwt. each per retort	Tons. cwt. qrs. 9 2 2	Do.	Do.	—	—	—
Cost of breeze coal at 1*l.* per ton	£ s. d. 9 2 6	Do.	Do.	—	—	—
Cost of lime used for purifiers	1 0 7	1 17 0	2 18 0			
Wages at 18*s.* per week	46 16 0	Do.	Do.			
Interest	67 8 3					
Repairs and renewal	Nil.					

(I have not been able to obtain any return of the expense incurred on the score of repairs and renewal since the establishment of the Haisbro' gas station, and abstain, therefore, from giving any figures, as the conditions of a small gas-work are so widely different from those of large works.)

The cost of a 1st power gas burner, giving a light nearly one-fourth superior to a good 4-wick first-class oil lamp (see House of Commons Paper, No. 3 of Session 1873,

p. 46), would thus be 186*l.* 9*s.* 4*d.*, or 10.14*d.* per hour; that of the 2nd power would be 237*l.* 15*s.* 5*d.* or 12.9*d.* per hour, and that of the 3rd power, giving 3.8 times the light of a good 1st class 4-wick oil lamp, would amount to 302*l.* 19*s.* 3*d.* or 16½*d.* per hour.

Mr. Douglass and Mr. Wigham are of opinion than an hourly consumption of 120 cubic feet of gas, all the year round, taking into account all kinds of weather, clear and foggy, as well as the consumption for cottages, &c., will be about what should be calculated upon.

The cost of such a light would be as follows:—

	£	*s.*	*d.*
Cannel coal, 50.42 tons at 2*l.* 17*s.* 6*d.*	144	19	0
Breeze coal, 2 qrs. per day	9	2	6
Lime for purifiers	2	7	10
Wages	46	16	0
Interest	67	8	3
Repairs and renewal	Nil.		
	£270	13	7

or 14⅜*d.* per hour.

Comparative Cost of Oil and Gas Burners used at Haisbro' Low and High Light-houses.—Trials were also carried on simultaneously with the oil lights at the Lower lighthouse which it had been agreed upon by the visiting Committee should be controlled by Mr. Wigham, who consequently assisted on both evenings in measuring out the colza oil for the 1st order 4-wick oillamp used on the evening of 1st April as well as for Mr. Douglass' powerful new 6-wick oil lamp used on the evening of 2nd April. From experimental data supplied to me by Mr. Wigham regarding the consumption of oil, and by Mr. Douglass regarding the cost of maintaining the lamps in other respects, I have been enabled to collect the following facts:—

I. 4-wick Trinity oil lamp.

Hourly consumption of colza on the night of 1st April = 36.2 fluid ounces.

Annual cost at 2*s.* 10*d.* per gallon (inclusive of delivery at Haisbro'),	£	*s.*	*d.*
4,412 hours = 998.187 gallons	141	8	2
One year's supply of wicks	2	1	0
„ „ chimney glasses	1	16	0
Interest on capital laid out in plant, &c., = 84*l.* at 4 per cent.	3	10	0
Repairs and renewals*	2	10	0
	£151	5	2

	Oil Light.	Gas Light, Power I.
Comparative cost of the two lights	£151 5*s.* 2*d.*	£186 9*s.* 4*d.*
Comparative illuminating power	328 candles.	429 candles.
Cost of lights of equal intensity	£151 5*s.* 2*d.*	£142 12*s.* 0*d.*
Proportional cost	100	94.3

or a saving of 5.7 per cent. by using gas.

It is but justice to point out that the real advantage of the Wigham Gas Burner consists not so much in its furnishing a somewhat cheaper light, equal in power to the oil light, now in use, but in its capability of producing lights of varying illuminating powers, some of which have never been, and probably never will be, attained by oil lights, also in its adaptability for flashing purposes and signal lights.

The higher power lights come so much cheaper, because the cost of making larger quantities of gas, which is represented by wages, interest on plant, &c., remains pretty well the same. It is here, in fact, where its undisputed advantage lies. This becomes clear, at once, if the hourly consumption of gas be taken at 120 cubic feet, a consump-

* It should be remembered that no repairs and renewals were taken into account in making out the estimate for the gas light, because I had no data to guide me. They would probably be much higher, however.

tion which both Mr. Douglass and Mr. Wigham are agreed upon will be sufficient for clear as well as foggy weather.

The annual expenditure for gas amounts then to - - £270 13 7

The 28-jet burner which was found to consume 51.4 cubic feet of gas per hour, can, of necessity, only be credited with an expenditure which is proportional to the consumption it actually involves, viz., in the proportion of 120 cubic feet to 51.4 cubic feet, or to - - - - - - - £115 18 10

Thus we have :—

	Oil Light.	Gas Light, Power I.
Comparative cost - - - -	£151 19 2	£115 18 10
„ illuminating power.	328 candles	429 candles.
Cost of lights of equal intensity - -	£151 5 2	£88 13 4
Proportional cost - - - -	100	58.35

or a saving of 41.6 per cent. by using gas.

II. New 6-wick Trinity oil lamp.

Hourly consumption of colza on the night of 2nd April = 88.74 fluid ounces (comp. House of Commons Paper, No. 3 of Session 1873, p. 46, where the consumption is stated to be 87.6 ounces).

	£	*s.*	*d.*
Annual cost, 2*s.* 10*d.* per gallon (including delivery), for 4,412 hours = 2,447.5 gallons - - - - - - -	346	14	7
One year's supply of wicks - - - - - -	5	1	0
„ „ chimney glasses - - - -	3	10	0
Interest on capital laid out in plant, &c. = 106*l.* at 4 per cent. -	4	11	7
Repairs and renewal - - - - - -	2	10	0
	£362	7	2

	Oil Light.	Gas Light, Power II.
Comparative cost of the two lights -	£362 7*s.* 2*d.*	£237 15*s.* 5*d.*
Comparative illuminating power -	722 candles.	832 candles.
Cost of lights of equal intensity -	£362 7*s.* 2*d.*	£206 6*s.* 0*d.*
Proportional cost - - -	100	56.9

or a saving of more than 43 per cent. by using gas.

It is obvious then that the new 6-wick colza oil lamp does not burn so economically as the 4-wick burner, nor as the 2nd power Wigham gas burner, for two reasons, viz. :—

(1.) Whilst the consumption of oil in the two lamps is as 100 to 245, the illuminating power is only as 100 to 220.

(2.) Because the gas can be burnt more economically from the 2nd power Wigham burner than from No. 1, and because it can be manufactured more cheaply on an increased scale.

The proportions would, however, be different for the same size lamp, burning paraffin instead of colza oil.

I employed part of Friday, 3rd April, to draw up forms for controlling the manufacture of gas as well as its consumption. In conjunction with Mr. Douglass and Mr. Wigham I discussed and draughted more concise regulations for the guidance of the gas-maker and lighthouse-keeper at the Upper lighthouse than those which I found in existence. I have since received from Mr. Wigham also a draft of regulations by which the light-keeper is to be guided in manipulating the new gas burner. This I had drawn up to prevent, in future, any misunderstanding, as to $\frac{3}{4}$ cock or full cock.

I append these papers, marked respectively A. B. C. D. and E.

Temperature of Lantern during Experiments.—It was but natural that a fear should be entertained, that the powerful new gas light might injure the valuable and delicately constructed lighthouse apparatus. In accordance with the desire expressed by the

visiting Committee, Mr. Douglass was good enough to note the temperature of the lantern in the High lighthouse. He has handed to me the following observations :—

Night of 1st April.

Mean temperature of lantern outside the Lenticular apparatus, 56° F. (between 8.30 and 11 o'clock.)

Temperature inside the Lenticular apparatus.

48	jet burner	85° F.
68	„	95° „
88	„	107° „
108	„	124° „
148	„	about 132° „

Night of 2nd April.

Mean temperature of lantern outside Lenticular apparatus, 62° F.

Temperature inside the Lenticular apparatus.

28	jet burner	82° F.
48	„	89° „
68	„	98° „
88	„	112° „
108	„	126° „
148	„	about 132° „

Mr. Wigham performed the like service for me on the night of 2nd April at the Lower lighthouse. I quote his observations :—

Temperature of lantern inside Lenticular apparatus.

At 8	o'clock p.m.	83° F.
„ 9	„	Do.
„ 10	„	85° „
„ 12	„	84° „
„ 2	„	83° „
„ 4	„	84° „
„ 5.30	„	82° „

Temperature of lantern outside Lenticular apparatus.

At 8	o'clock p.m.	62° F.
„ 9	„	62° „
„ 10	„	63° „
„ 12	„	64° „
„ 1	„	64° „
„ 5.30	„	62° „

As these observations are in harmony with what you observed during the trial of the Wigham lamp at Howth Bailey lighthouse in 1869, any fear on the score of injury to the dioptric apparatus may be confidently dismissed.

It will appear from the searching investigation to which the new burner was subjected that it is especially adapted for high-power lights and for signal and flashing lights. Its great flexibility of photogenic power constitutes, in fact, its chief advantage. Being a new method of lighting up lighthouses, and requiring new appliances, it is obvious that the manufacture of the gas and the management of the lights should, for some time to come, be specially looked after, and to this end I would strongly recommend to your notice the system of checks by monthly returns, &c. which I devised conjointly with Mr. Douglass and Mr. Wigham, and which is set forth in the papers which I append.

I have, &c.

(Signed) Wm. Valentin,

(Principal Demonstrator of Practical Chemistry.)

To Professor Tyndall, LL.D., F.R.S., &c.

APPENDIX A.

	Cubic Feet.
Total produce of gas this month - - - - - - - - -	
Average produce of gas per ton of coal - - - - - - - cubic feet	

CONSUMPTION of GAS per METERS.

	Index last Month.	Index this Month.	Consumption.	
Lantern - - - -				
Principal's dwelling - -				
Assistant's do. - - -				
Tower lights - - -				
Total consumption of gas per meter - - - -				
Condensation, &c. - - - - - -				

APPENDIX B.

	Tons.	Cwts.	Qrs.	Lbs.
Stock of cannel coal from last month - - -				
Received during the month - - - -				
Total - - - -				
Carbonized this month - - - - -				
In stock at end of this month - - - -				
Stock of banking coal from last month - - -				
Received during the month - - - -				
Total - - - -				
Consumed this month - - - - -				
In stock at end of this month - - - -				

APPENDIX C.

Gas Manufacture.

Day of the Month.	Cannel Coal carbonized.		Banking Coal consumed.		Gas made as per Index of Station Meter.	Produce of Gas per Ton of Coal.	Coke produced per Ton of Coal.	Illuminating Power determined by Photometer.
	cwt.	qrs.	cwt.	qrs.		Cubic Feet.		

APPENDIX D.

Instructions for Light Keepers.

Gas Works.

Heating retorts.

1. Light a fire in the furnace, leaving the damper full open. Keep the ash-pit under the furnace always full of water. The fire is never to be allowed to go out as long as the retort is in working order. The fire to be properly damped with banking coal while holding on.

2. When the retort shows any sign of redness, close the damper slightly. Care must be taken that the retort does not become what is called "white hot." Should there be an appearance of overheating, open the furnace door. If the retort is heated at one end more than the other, close the damper almost entirely until it shows an uniform red heat, and in no case should the fire be kept playing upon a red-hot retort which is empty, or in which the charge is spent.

Charging retorts.

3. Before the charge is put in, be careful to have a lid ready luted by spreading some lime putty (free from grit), round the edge so that there may be no time lost in fixing it on.

4. Let the retort get to a bright red heat before the charge of coals (which must be perfectly dry) is put in, and be kept so while the charge is working off. The charge should be evenly spread over the bottom of retort, and sufficient room left between the coal and the top of the retort for the free escape of the gas generated.

Distillation of coal.

5. The charge (of from $1\frac{1}{4}$ to $1\frac{1}{2}$ cwt.) should be worked off in about four to six hours, according to the heat of the retort and weight of the charge. The gas-maker is to be guided by the working of the station meter. Before drawing one charge, get the next charge ready and spare lid prepared as before described. Then slack the screw and apply a light to the gas which will escape from the joint of the retort lid. Then rake out the coke from the retort into the coke barrow, and scrape clean the surface of the retort while it is red hot.

Cleaning of flues, furnace bars, &c.

6. Care to be taken that the flues from furnace and at sides of retort are kept clean; these flues should be cleaned at least once every fortnight. The surface of furnace bars to be maintained in a clean condition, and no clinkers to be allowed to accumulate on the bars, flame-bed, or flues. Be careful to place no fuel anywhere but on the furnace bars.

Purification.

7. The scrubber should be cleaned once a week, and when this is done the valve at gas holder must be shut.

8. Be sure to change one of the purifiers, after the gas from eight charges of a single retort, or four charges of a double retort, has passed through them, always taking care to change the purifier in which the lime is most foul, namely, that through which the gas has passed, first, so as to let the gas pass through the clean purifier last.

9. The lime made use of in the purifier must be damped, so that it will just stick together when squeezed in the hand, but not so damp as to be pasty; it should be spread two inches thick on the sieves, and the apertures round the sieves should be well covered.

10. Always turn the change valve before taking off the purifier lid, or the gas will escape from the holder.

11. When the lime is in its place put on the lid and fill the lutes with water to prevent the gas from escaping, first seeing that no solid matter has fallen into them; afterwards turn the change valve.

12. The change valve should not be lifted from its seat, but the catch raised, and the cover shifted round to the required position; the catch can then be dropped into the slot provided.

13. The gas should be tested every charge to see that it is perfectly free from sulphur. This can be easily done by holding a piece of white paper, moistened with saturated solution of sugar of lead, over a stream of gas after it leaves the purifier; if impure, the test paper will be discoloured.

Disposal of residual products.

14. The *coke and tar* are to be used for heating the retorts; any excess of these products over the quantity required for heating the retorts in winter to be stored for use during summer.

The tar is to be first mixed with the fine siftings from the ash-pit and from dwellings, and also with the fine breeze from the coke, and this mixture to be afterwards mixed with the coke for heating the retorts.

The ammoniacal liquor and waste lime may be used for fertilizing the gardens of the establishment.

Means of controlling the manufacture of gas.

15. Each charge of cannel is to be weighed, and the weight entered in the journal. Each discharge of coke is also to be weighed and entered in the journal. Each day's consumption of banking coal is also to be weighed and entered in the journal.

The quantity of gas made from each charge as indicated by the station meter is to be entered in the journal.

General instructions.

16. Never have any lights near the purifiers, the gas holder, or the meter house, either by day or night.

17. The tank syphon to be pumped out every evening before lighting time; all other syphons are to be examined and emptied when necessary, and all apparatus and pipes from retort to purifier are to be cleaned out at least twice every year by removing the cleaning doors, taking care to refill with water the hydraulic main and condenser.

APPENDIX E.

Directions for using Wigham's Patent Gas Lamp at Haisbro'.

The main cock in the lantern to be always turned full on; the No. 1 or 28-jet burner to be controlled by the micrometer cock placed close below it, and the flames of the other respective sizes of burners, viz., No. 2, consisting of 48 jets, No. 3, of 68 jets, No. 4, of 88 jets, No. 5, of 108 jets, and (if afterwards applied) No. 6, of 148 jets, to be so regulated by the special ground-in iron cup valves which are attached to each half ring of each size of burner, so as to render the flames when lighted of equal height, and so that a zone of uniform intensity should be always maintained in the focus of the apparatus, say at a height of $1\frac{1}{2}$" above the tips of the jets. Approximately the consumption of each burner will then be

28-jet burner	50 feet per hour.
48 „ „	100 „ „
68 „ „	150 „ „
88 „ „	220 „ „
108 „ „	290 „ „
148 „ „	400 „ „

N.B.—The papers marked A., B., C., D., have been discussed and agreed upon by—

(Signed) W. Valentin.
(Signed) John R. Wigham.
Haisbro', 3rd April 1874. (Signed) Jas. N. Douglass.

Sir, Trinity House, 11th December 1874.

Pursuant to the instructions of the Board that I should report on the recent investigations as to gas and oil at Haisbro', I beg to offer the following observations.

On the 14th of April last, I submitted a report of the experiments made at Haisbro', on the 1st and 2nd of that month, together with my observations of the photometric measurements of the gas flames, the consumption of oil with the 4 and 6 wick burners, &c.; and I find, on comparing the measurements included in my statement with those of Mr. Valentin, that they very nearly agree.

The admirable arrangements made by Mr. Valentin for determining the quality and consumption of the gas, and the photometric measurements of the gas flames, with each power of the "Wigham" burner, were very complete; and the results are doubtless most conclusive. But in reducing the facts and conclusions of these reports to practical application in actual service, some considerations must be taken into account, which I desire to put before the Elder Brethren.

I do not think it would be correct, for lighthouse purposes, to adopt the measurements of the powers of the *unaided* flames as the basis of any comparison of efficiency or economy of the gas and oil lights.

Such a comparison can, it appears to me, only be instituted fairly from the observations made at sea of the results obtained from these lights when aided by the dioptric apparatus.

In the experiments conducted at Haisbro', the Elder Brethren, with Dr. Tyndall, observed such results from sea; and Mr. Valentin determined the initial powers on shore, the measurements of the latter being verified by Mr. Wigham and myself; and I avail myself of the conclusions thus arrived at in making the calculations which follow.

It will be found, on comparing the photometric measurements of the initial powers of the 28 and 48-jet gas burners with the observations from the sea of these flames aided by the dioptric apparatus, that a considerable loss is incurred by the gas flames as contrasted with the oil flames, owing, in my opinion, 1st, to the greater vertical dimensions of the former, and consequently the greater amount of exfocal light; and 2nd, to the low degree of intensity in the gas flames of an available focus for a dioptric apparatus, compared with that to be found in the oil flames.

The photometric measurements of the 4-wick unaided oil lamp and the unaided 28 jet gas burner are respectively 328 candles and 429·6 candles, or as 100 to 131.

When sent from the 1st order dioptric apparatus, and observed at sea, the beams of these lights are found to be practically equal; thus showing, in its present relation to dioptric apparatus of the present 1st order dimensions, a waste in the power of

gas light which, by contrast, appears to confer a superiority on the oil flame, as a lighthouse illuminant, equal to 31 per cent.

Again, with the unaided 6-wick oil lamp and the unaided 48-jet gas burner, the photometric measurements are found to be respectively 722 candles and 832 candles, or as 100 to 115.

When observed at sea, as transmitted through the lenticular apparatus, the beams from these lights are found to be practically equal; thus showing, in like manner, a present superiority of the oil flame, as a lighthouse illuminant, equal to 15 per cent.

A mean of these per-centages, or 23 per cent., may, therefore, in my opinion, be assumed as fairly representing the superiority of the oil flame as a lighthouse illuminant. In other words, supposing the initial illuminating powers of both oil and gas flames to be equal, the resultant beam of the oil flame sent from a dioptric apparatus is found to be 23 per cent. superior to that of the gas flame so sent.

The above relative values would appear to apply to the powers up to 48 jets; but, in the case of the higher powers of the gas burners, the loss by exfocal light must be even greater; the heights of the larger flames, compared with the height of the 28 jet burner, being as 28 inches to 12 inches, or as 100 to 42·8; and, as compared with the 48-jet burner, as 28 inches to 20 inches, or as 100 to 71·4.

This question of the dimensions of a lighthouse illuminant is one of very considerable importance as affecting the aid to be derived from lighthouse apparatus (whether dioptric or catoptric) in intensifying the beams of fixed or revolving lights, and the efficiency of fixed or intermittent lights for cutting where coloured arcs are necessary for the service of navigation.

Fresnel, in designing the several orders of dioptric lights, so adapted the dimensions of the oil burners to the radius of the various orders of apparatus as to give with each order a divergence of the beams of about $5\frac{1}{2}$ degrees in the horizontal plane, and of about $6\frac{1}{4}$ degrees in the vertical plane; the latter being sufficient, in the case of lighthouses at all ordinary elevations above the sea surface, for fairly distributing the light from a maximum at the sea horizon to a minimum at a short distance from the base of the lighthouse.

With revolving lights a mean accumulated power was thus gained, equal to the azimuthal angle subtended by each of the revolving lenses, divided by the horizontal divergence of the flame.

Thus, in the case of a six sided apparatus, or one with six revolving lenses, a mean accumulated power was obtained equal to $60° \div 5\frac{1}{2}°$ 10·9 times (nearly) that of a fixed light; and with fixed or intermittent lights where coloured sectors were necessary for marking dangers, or for other local purposes, the $5\frac{1}{2}°$ of horizontal divergence was found to give a fair and useful approximation to a decided cut, which, however, can only be perfectly attained by means of the electric spark.

With the Trinity House improved oil burner, while the vertical divergence of the flames is nearly the same as before, they have been condensed in the horizontal plane, reducing this divergence to about $4\frac{1}{2}$ degrees; thus, while the sharpness of the cuts with a fixed or intermittent light has been increased, the accumulated power with the revolving lights has been increased also in the same ratio, viz., from 10·9 to 13·3. It should, however, be remembered that, with the latter class of lights, having the new flames in focus, there is a corresponding decrease in the duration of the flash.

With the new 6-wick burner, the height of the flame is increased from 4 inches to 5 inches, and the diameter at the focal plane from $2\frac{3}{4}$ inches to $4\frac{3}{8}$ inches, thus giving a vertical divergence of about 8 degrees, and a horizontal divergence of 7 degrees.

Comparing this flame with the old flame, the loss from vertical divergence is nearly inappreciable, while with dioptric fixed or intermittent lights the decision of cuts is only impaired in the ratio of 7 to $5\frac{1}{2}$, or about 27 per cent.

With a dioptric revolving light apparatus of six sides (such as the Start) the accumulating power of this flame, compared with the accumulating power of the old flame, is as 8·6 to 10·9 times the power when used in dioptric apparatus for fixed light.

From the above considerations I am disposed to conclude, having regard to efficiency and economy, that, for revolving lights or for fixed or intermittent lights where cuts are required, the diameter and height of the flame of the 6-wick oil burner fairly represent the maximum for use in dioptric apparatus of the present 1st order dimensions; although I do not consider that the flame of the 6-wick burner nearly approaches the limits, as to dimensions and power, that could be arrived at from oil burners, were

greater results found to be necessary for special purposes. I speak only of the first order type of dioptric apparatus, because any increase in its size would involve very much additional expense, not only in this instrument, but in lantern and tower.

With the view of showing, in a convenient form, the comparative powers to be obtained from fixed and revolving lights by the use of the illuminants now employed, viz., oil, gas, and the electric spark, also the relative values of these illuminants for fixed or intermittent cutting lights, I have prepared the annexed table.

From this table it will be seen that, if the 108-jet "Wigham" gas burner be adopted as the practical upper limit of this illuminant (as suggested by Dr. Tyndall and corroborated by the figures in the table) there is shown, in the case of the 108-jet gas burner, a power for fixed lights equal to 3·4 times that to be obtained from the 6-wick oil burner. If on the triform system of Mr. Wigham, the increased power is shown to be 7·1 times.

In the case of the revolving lights there is shown, with the same 108-jet burner, a power equal to 1·3 times that to be obtained from the 6-wick oil burner; and, if on the triform system, a power equal to 2·8 times that of the 6-wick oil burner.

With a fixed or intermittent light for cutting in azimuth the comparative efficiency of the same gas and oil flames is as 25 to 63; the oil being in this case 2½ times more efficient than the gas.

With the electric light it is found that there is a power for fixed lights equal to 8½ times that to be obtained from the 6-wick oil burner; and that there is a power for revolving lights equal to 13·2 times that to be obtained from the 6-wick burner.

It is also found that, in the case of a fixed or intermittent light, where coloured arcs are required, the comparative efficiency of the electric spark and the oil flame, for cutting, is as 880 to 100.

Further, with the electric light it would appear to be doubtful whether any limit can be assigned to the power that may be obtained, the question appearing to be one of cost only.

It will also be observed from the annexed table that the maximum power of an electric, fixed, or intermittent light (as found to be obtained from two "Gramme" machines, similar to the one used in the experiments made at the Westminster Clock Tower) is nearly the same as that which is to be obtained from the 6-wick oil burner in a six-sided dioptric apparatus for revolving light, and about 7/25th of the ultimate power to be obtained from a revolving triform gas light; while such a light as the one described can, with the greatest precision, be cut in azimuth for marking local dangers.

With reference to the comparative cost of the gas and oil lights, I am informed that this is being worked out by the accountant.

Respecting the performances of the 4 and 6-wick lamps at Haisbro' on the nights of the 1st and 2nd of April, I beg to submit the following observations:—

On the night of the 1st April, the hourly consumption of colza by the 4-wick lamp was 36·20 fluid ounces, with a mean illuminating power of 328 candles. Therefore, 36·20 ÷ 328 = ·1104 ounces per candle per hour.

On the night of the 2nd April, the hourly consumption of colza by the 6-wick lamp was 88·74 fluid ounces, with a mean illuminating power of 722 candles. Therefore, 88·74 ÷ 722 = ·1229 ounces per candle per hour.

There was thus shown in the performance of the two lamps, a difference in favour of the 4-wick, as regards economy, equal to ·1229 — ·1104 = ·0125 or 11·32 per cent.

My first report to the Elder Brethren of the performance of the 6-wick burner was dated 17th December 1872.

In this report the consumption is stated to be 87·6 fluid ounces per hour or ·121 ounces per candle per hour. The burner used in the experiments therein detailed was the first of its size that had been constructed under my direction. In making other burners of this class further improvements have been effected; and the arrangement for burning concentric wick lamps at half or full power has been devised. The latter improvement I reported to the Elder Brethren on the 8th July last year; and on the 13th of January last I submitted, with a report, a description of a further improvement of the half and full power arrangement.

I then stated as follows:—"Since the date of the report above referred to (8th July "1873) I have also succeeded in burning mineral oil satisfactorily in the 6-wick "burner, and a reduction per unit of light has been effected in the consumption of "oil, both vegetable and mineral, in all the burners of more than one wick.

"This has been chiefly due to the improvements which have been made in the form " and proportions of parts of the burners, and the glass chimneys."

In this report was enclosed a statement showing the candle power of each size of burner from one to six wicks, the candle power of the burners of two to six wicks when burning half power, also the comparative illuminating powers and consumption of oil of the old and improved burners. In this statement it was shown that, with the 4-wick lamp at full power, the hourly consumption of colza was 33·46 ounces, with an illuminating power of 328 candles; the consumption per unit of light per hour being thus 33·46÷328=·102 ounces. And, with the 6-wick lamp at full power, the hourly consumption of colza was shown to be 79·42 ounces, with an illuminating power of 722 candles; the consumption per unit of light being thus 79·42÷722=·110 ounces. There was, therefore, shown in the performance of the two lamps a difference in favour of the 4-wick, as regards economy of combustion, equal to ·110—·102=·008 or 7·84 per cent.

In the Haisbro' experiments the difference in economy of combustion is shown to be 11.32 per cent.

Considering, however, that there has yet been little experience gained with the manipulation of the 6-wick burner, and that at Haisbro' it was on its first trial in a lighthouse lantern, I am of opinion that the difference there shown in economy of combustion between it and the 4-wick burner will be further reduced; indeed, I am inclined to the opinion that, with the oil burners of all sizes, from one to six wicks, no appreciable difference will eventually exist as regards economy in working.

As affecting the intensity and consequent efficiency of the gas light, it is important that the quality of this illuminant, having now been determined, be adhered to as nearly as possible, as is done in the case of both the oil and the electric lights.

To accomplish this it will be necessary to provide each lighthouse with a photometric apparatus similar to that used by Mr. Valentin in the Haisbro' experiments; and that the principal keeper, who should be instructed in its use, should enter in his journal daily, together with the quantity of gas made, the illuminating quality of the same. This illuminating quality, however, should also be checked by a competent officer, who should visit and thoroughly inspect the works every three months.

As respects two very important characteristics of the gas light, which it possesses in a greater degree than any other lighthouse illuminant, viz., its flexibility or plasticity, and its power of conferring individuality without wasting any portion of the light, I would observe that all required modifications of revolving, flashing or group-flashing lights may be produced by means of oil or electricity without any waste of light; but, in the case of intermittent lights, although any required modification may be produced with the utmost precision, no arrangement appears to have yet been devised for utilising the whole of the light; the waste of the illuminant being always nearly in the ratio of the total amount of darkness to that of light. If it be considered, however, that with this class of lights the distinguishing feature should probably be in every way the reverse of revolving lights, viz., long light and short dark, together with a sudden disappearance and reappearance of the light, against long dark and short light, together with a gradual appearance and disappearance of the light, the percentage of waste in the case of the oil and electric lights would not be great.

I would beg to suggest, for the consideration of the Elder Brethren, the desirability of making experiments with intermittent lights, which would be particularly applicable to shore stations where coloured sectors are now applied to fixed lights, the distinctive character of the station throughout the whole arc illuminated being thus ensured in every case.

From this class of lights as many distinctions could be obtained as from revolving lights, perhaps more; therefore it would appear that with revolving, flashing, group-flashing, and intermittent characters combined, and used as local circumstances may suggest, the number of trustworthy distinctions available would be sufficient to meet fully all the requirements of navigation.

I am, &c.

JAS. N. DOUGLASS.

TABLE showing the estimated comparative powers of FIXED and REVOLVING LIGHTS with OIL, GAS, and ELECTRICITY as Illuminants; also the relative Efficiency of the Illuminants for Fixed or Intermittent Cutting Lights. The improved 4-wick Oil Lamp, having a power of 328 Candles, is adopted as the Standard, and is represented by the Number 100.

Description of Illuminant.	Power of Illuminant in Standard Sperm Candles or Units.	Dimensions of Flames.		Divergence of Flames.		Fixed or Intermittent Lights.	Revolving Lights, Eight Sides.	Revolving Lights, Six Sides.	Relative Efficiency for Fixed or Intermittent Cutting Lights.
		Horizontal.	Vertical.	Horizontal.	Vertical.				
		Inches.	Inches.	Degrees.	Degrees.				
Improved 4-wick oil lamp -	328	$2\frac{3}{4}$	4	$4\frac{1}{2}$	$6\frac{1}{4}$	100	1,000	1,333	100
Old do. do. -	269	$3\frac{3}{8}$	4	$5\frac{1}{3}$	$6\frac{1}{4}$	82	671	894	81
Improved 6-wick do. -	722	$4\frac{3}{8}$	5	7	8	220	1,414	1,886	63
"Wigham" gas burner: 28 jets	429·6	$4\frac{1}{4}$	12	$6\frac{3}{4}$	19	100	667	889	65
If a triform light -	1288·8	"	"	"	"	210	1,400	1,867	"
"Wigham" gas burner: 48 jets	832	$5\frac{7}{8}$	20	$9\frac{1}{2}$	31	220	1,041	1,390	47
If a triform light -	2496	"	"	"	"	462	2,186	2,919	"
"Wigham" gas burner: 68 jets	1253·18	$7\frac{1}{2}$	28	12	$42\frac{1}{2}$	318	1,192	1,589	37
If a triform light -	3759·54	"	"	"	"	667	2,425	3,337	"
"Wigham" gas burner: 88 jets	2408	$9\frac{1}{4}$	28	$14\frac{1}{2}$	$42\frac{1}{2}$	611	1,893	2,527	30
If a triform light -	7224	"	"	"	"	1,282	3,976	5,307	"
"Wigham" gas burner: 108 jets	2923·4	$11\frac{1}{8}$	28	$17\frac{1}{2}$	$42\frac{1}{2}$	742	1,906	2,542	25
If a triform light -	8770·2	"	"	"	"	1,557	4,002	5,338	"
"Wigham" gas burner: 148 jets	3136	$12\frac{3}{4}$	28	20	$42\frac{1}{2}$	795	1,790	2,386	22
If a triform light -	9408	"	"	"	"	1,670	3,758	5,011	"
Electric light: "Gramme" machine	3066	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{11}{12}$	$1\frac{3}{24}$	935	9,348	12,460	880
Do. (double power)	6132	$\frac{5}{16}$	$\frac{3}{8}$	"	"	1,870	18,696	24,920	"
(With the electric light the same divergence, viz. $4\frac{1}{2}°$, is allowed for the six and eight-sided revolving lights as with the 4-wick oil-burner).									

NOTE.—Any of the above relative powers multiplied by 89·8 will give, approximately, the power of the beam of light in standard candles.

SIR, Royal Institution, 21st January 1875.

I HAVE read the report of Mr. Douglass which you have submitted to me; and although it throws upon me unexpected labour at a very busy time, I comply, as far as it is possible for me to do so, with the desire of the Elder Brethren by offering upon the report the following observations.

Firstly, with regard to the 28-jet burner I am not disposed to assume with Mr. Douglass that the difference between the photometric measurements, and the observations at sea, is due to the "vertical height" of the gas flame, rendering its light exfocal.

It would have been gratifying to me had Mr. Douglass mentioned this objection at Haisbro'. For by a process familiar to both of us it would have been easy to cut off the exfocal light and to determine its exact numerical value. After reading the report of Mr. Douglass the best means open to me was to ask the celebrated optician Mr. Grubb, of Dublin, to determine the photometric value of that portion of the 28-jet flame which rises above the height of 4 inches, this being the height hitherto aimed at in the case of the 4-wick Trinity lamp. Mr. Grubb has done this, and he certifies the photometric value of the part of the flame referred to, to be under 4 per cent. of the whole illumination. Mr. Douglass makes the amount 31 per cent.

I expressed my regret at Haisbro' that we were not able to make the two lights reversible; for in this way alone is any peculiarity of the dioptric apparatus, which might affect the one or the other of the flames, to be eliminated. To one peculiarity I expressly drew the attention of the Elder Brethren with whom I had the honour to act, and I proposed experiments with a view to its elimination. But they did not deem such experiments necessary. Nor, in view of the performance of the gas, and its demonstrated power, "plasticity," and handiness in other respects, did I deem them necessary.

The three elements which, in my opinion, are the determining ones in the comparison of gas and oil are *power*, *cost*, and *ease of manipulation*. Instead of discussing these Mr. Douglass fixes attention upon a fourth element, which he calls "superiority as a

"lighthouse illuminant." My only reference to this phrase shall be made with a view of rendering its meaning perfectly clear. In using it the practical question of cost and actual performance is not in the mind of Mr. Douglass, but the idea that *were the gas pulled down so as to render the two lights photometrically equal*, the better shape of the new Trinity lamp-flame would render it 31 per cent. superior to its rival. It is sufficient to say that this idea can be first experimentally tested after the two lights have been rendered reversible.

There is one point in connexion with the 28-jet burner which in justice to its inventor I must here signalise. Anxious to give the Elder Brethren the maximum of information, Mr. Valentin has stated in a table the cost of the 28-jet burner, supposing it to be pitted *at Haisbro'* against the 4-wick lamp. In that table he debits the small burner with the whole of the gas-maker's wages, and with the whole of the interest on 1,685*l.* 6*s.* 9*d.* Now the gas-maker is there, not to produce gas for a 28-jet burner only, but for a series of fog burners, culminating in one of 108 jets. He manufactures, not 51·4 cubic feet of gas an hour, but an average of 120 cubic feet an hour. Were it, moreover, proposed to erect works for a 28-jet burner, an idea to my knowledge not entertained, a fraction of 1,685*l.* 6*s.* 9*d.* would cover the cost.

In a supplementary sheet herewith sent (now incorporated in the report on the experiments at Haisbro') Mr. Valentin calculates the cost of the 28-jet burner on the basis of debiting it with its proportion of the gas annually consumed. The result is, that taking the flame with its alleged defects of shape—assuming the observations at sea to represent its true value—there is still, in point of economy, a large per-centage in favour of the gas as compared with the oil, while a considerably larger per-centage accrues if we take the photometric results as the correct ones.

We now pass on to the comparison of the 48-jet burner and the 6-wick lamp. Here two of the observers preferred the gas as having the greater "body." But I waive this and permit the two lights to stand as equal to the eye. Mr. Valentin credits the gas with a superiority *as to cost* of 40 per cent. Mr. Douglass credits the oil "as a lighthouse illuminant" with a superiority of 15 per cent. I have already endeavoured to render clear the meaning of this latter phrase. Let us now look at the real practical facts.

The photometer in the present instance makes the 48-jet burner 121 candles better than the 6-wick lamp. Let us regard the light of these candles as exfocal, in the worst sense; that it is thrown not upon the sea, where it might be of use, but upon the sky, where it can be of no use. The cost of the gas, calculated from the best data obtainable by Mr. Valentin, is 237*l.* 15*s.* 5*d.*, the cost of the oil is 342*l.* 11*s.* 11*d.* If these numbers be correct then for every 100 pounds spent on gas, even though it should embrace 121 useless candles, 144 pounds will be spent on oil. In these calculations the cost of the gas-maker is included. I have been frequently assured by Mr. Douglass that this cost is unnecessary; and that for a slight augmentation of their pay the light-keepers would gladly undertake the making of the gas. But I would respectfully impress upon the Elder Brethren the fact that no comparison of the kind here made can exhibit the full advantage possessed by the gas. With it we can at once pass from the 48-jet burner of 832 candles to the 88-jet burner of 2,408 candles. And by cutting up the beam into equal intervals of light and darkness, with an expenditure of gas not much in excess of that necessary to feed the 48-jet burner as a fixed light, we can obtain a succession of flashes, or luminous shocks, each possessing nearly three times the power of the 48-jet beam. Nothing of this kind is possible to the oil light.

In the larger powers of the Wigham burner, while showing in clear weather lights of the utmost splendour, a great part of the light is necessarily more or less exfocal. The focus is fixed for the horizon, and every addition to the power of the burner strengthens the beam in this direction. The large powers, however, are not required for the horizon; they are intended for thick and foggy weather when the horizon is utterly unattainable, and when the object is to make the light strong nearer shore.

The glare of these powerful flames upon a fog, more especially if the system of flashing be introduced, cannot fail to be of the utmost service as a guide to the mariner.*

The reference of Mr. Douglass to his experiments at Westminster caused me to ask you to send me the report of those experiments. This you have been kind enough to

* *Vide* Correspondence at the end of my Report on Fog Signals, House of Commons Paper, No. 188 of Session 1874.

do. To one only of the questions raised by this report I will here refer, and it is one of fundamental importance in relation to the present question. Mr. Douglass states emphatically his belief in the accuracy of the photometric results at Haisbro'. He considers them "most conclusive." Well those measurements make the 108-jet burner equal to 2,982 candles, while the measurements at Westminster make it equal to only 1,199 candles.

Either then the measurements of Mr. Douglass are inexact, or the gas he operated on must have been of extraordinary poorness.

To this point, doubtless, the Elder Brethren will direct his attention.

Mr. Douglass in his report brings the electric light into prominence. I hope that noble light will ever shine upon the shores of England. Wherever sharp lines of demarcation are needed it has no rival. In such cases, and not in such alone, I should strongly recommend its adoption.

But we do not possess the data that would entitle us to place it above the gas when the maximum power of this illuminant is invoked.

It would give me great satisfaction to have this question decided; and to see the triform gas light pitted, as regards cost, penetrative power, and general handiness and efficiency, against the best electric light which has stood a year's wear and tear upon our coasts. But even granting that the electric light should come out triumphant, the question would still have to be settled between gas and oil.

It would perhaps have been well if the gas system had been permitted to develop itself further in Ireland before testing it in this country. When Atlantic mariners have had the advantage of comparing the Fastnet with Galley Head, they will be able to pronounce authoritatively on the merits of the gas station. Meanwhile I think the Elder Brethren may accept my assurance that gas places in their hands a new power, both as regards penetration and distinction; and that great advantage will accrue from its partial intercalation with oil and electricity along our coasts. Let us look for a moment to its established ranges of power. At Haisbro' and Howth Bailey there is a capacity of variation from 28 jets to 108 jets, or from 429 candles to 2,923 candles, which is a ratio of nearly 1 : 7. In the triform we have a power of variation from 28 jets to 324 jets, or from 429 candles to 8,769 candles, which in round numbers is a ratio of 1 to 20. In the triform we dispense with the upper and lower prisms. This makes the 28-jet flame of less power than when the full apparatus is employed, but if thought necessary the addition of a few jets would re-establish the power. In clear weather the 28-jet burner seems amply sufficient for the mariner, while as the weather thickens we can rise by steps, accomplished in a moment, to a photometric intensity twenty times as great. The force is thus at hand when it is needed, while it is husbanded when a clear atmosphere renders its employment unnecessary.

By the simplest mechanical contrivances, moreover, and without any change in the dioptric apparatus, the powerful beams of the gas light can be broken up into flashes of longer or shorter duration, ascending, in the case of fogs, from the mere winking of the 28-jet burner, to the sevenfold shock of the 108-jet one, and to the twenty-fold shock of the triform. By making the intervals of light and darkness equal to each other these powerful flashes are obtained with the expenditure of gas needed to maintain the burner as a fixed light; while by varying the flashes as regards duration and succession the light might be rendered distinctive to the dullest seaman; the possibility of mistaking one light for another, which is now so frequent and disastrous,* being thus reduced to a minimum. Until I read his report I did not imagine that there was any difference of opinion between Mr. Douglass and myself on these important points.

And here I would once more emphasise the advantage likely to accrue from these powerful and sudden flashes in the case of fogs too heavy to permit of the light itself being seen through them. I have operated upon artificial fogs so dense that a stratum of two or three feet in thickness sufficed to cut off totally the view of the electric light. But the fitful *glare* produced upon the fog by the alternate extinction and ignition of the light was most remarkable. In reference to this point I may be permitted to quote a remark added on the 27th of last May to a paper presented to the Royal Society. Here it follows verbatim:—"The more I think of it, and the more I experiment upon "it, the more important does this question of flashes appear to me. In one of the "sections of the foregoing paper experiments on artificial fogs are described. The "densest of these were suddenly and strikingly illuminated throughout by the com-

* I am guided here by accounts of wrecks in the newspapers, and by conversations with nautical men; deferring, of course, to the more definite and accurate records kept by the Trinity House and the Board of Trade.

" bustion of half a grain of gunpowder, and of a still smaller quantity of gun-cotton. " The cutting off and restoration of the candle light, or the electric light employed to " test the density of the fog, produced a similar effect. It is its suddenness that renders " the lightning-flash so startlingly vivid through a cloud. A revolving light like the " South Stack does not fulfil the necessary conditions. Its revolution is slow and the " angular spaces between the beams being filled by laterally scattered light the " differential action is practically abolished. At a distance the luminosity, when " uniform, may be so feeble as to be unseen, while its sudden extinction and revival " would render it sensible."

In my earlier reports to the Board of Trade I defended the system of gas illumination against an opposition based upon mistaken data. Here, as there, I have endeavoured to set forth clearly its merits and capabilities, which in my opinion are beyond dispute. I have neglected no means of testing this conviction in the most thorough manner. The gas system has for years successfully stood the test of experiment. No failure referrible to it has been reported. It was my desire at the outset that the Messrs. Stevenson should join me in Ireland and witness the experiments for themselves. They declined to do so. At the end of August last I wished the President of the Board of Trade, and the Elder Brethren his companions, who were then in the Kingstown Harbour, to witness the performance of the light; they were unable to do so. Once I had the good fortune to secure the co-operation of Admiral Collinson, and in Kingstown Harbour, with the triform shining at Howth Bailey five or six miles away, I asked him whether he had ever seen so fine a light. " Never, I believe " was his reply. Nor is it to be supposed that the Wigham burner has reached perfection. With due encouragement the burner of ten years hence would probably be as superior to the present one as the 4-wick lamp of to-day is to that of ten years ago.

I have, &c.

ROBIN ALLEN, ESQ. (Signed) JOHN TYNDALL.

Note.—The opportunity of reading the remarks of the Elder Brethren* on the foregoing investigation has been courteously and spontaneously granted me. The concluding paragraph, which makes known the intentions of the Brethren with regard to the future of the gas, is, I think, in accordance with that true conservatism which, while resisting capricious change, does not refuse scope and encouragement to real improvements. This being my opinion, it would be as ungracious as unnecessary on my part to go over their arguments in detail. I will only say that had the Brethren and their adviser worked together on this gas question as long and assiduously as in our researches on Fog-signals, we should, I am persuaded, (possibly by a little yielding on both sides) be as unanimous regarding the former as we now happily are regarding the latter.

One word more. I hold in my hand the letter of a friend, a passenger from Calais to Dover on the 31st of October, describing the extinction by fog of the electric lights at the South Foreland. But the Elder Brethren themselves have cited (page 59, footnote) a still more striking illustration of the same kind. Here, it seems to me, we have the precise conditions necessary for testing the utility of flashes in the case of the electric light. The highly intelligent light-keepers at the South Foreland (and a more steady and intelligent body of men than the light-keepers generally it would be difficult to find) may readily be taught the alternate occultation (which ought to be complete) and opening of the light, and to observe whether the glimmer on the fog is not seen after the light itself has ceased to be visible. Similar observations, though with less ease, might be made at Haisbro'. To be really effectual the change from light to darkness, and from darkness to light, ought to be *sudden*. With this practical suggestion I bring these remarks to an end.

J. T.

8th February 1875.

See page 59.

Dublin, 9th January 1875.

I CERTIFY that I have carefully tested the illuminating power of the "tails" or that portion of the flame of a 28-jet Wigham's gas burner which is above a height of 4 inches from the tips of the jets, and I find it to be 3·87 per cent. of the whole light of the burner. The burner consumed during the experiments about 51 cubic feet per hour of what is technically called 34 candle gas, viz., that 5 cubic feet per hour was equal in illuminating power to 34 sperm candles each consuming 120 grains per hour.

The photometer I used was a 36 feet Bunsen's photometer, and by the interposition of an iron shade I alternately ascertained the illuminating power of the light with and without the tails, the observations being made in sets and alternately again and again until I was satisfied that the result as above reported is correct.

(Signed) H. GRUBB, C.E.,
F. of A.S.

Trinity House, London, E.C.,
30th January 1875.

SIR,

ADVERTING to previous correspondence on the subject of the experiments with gas at Haisbro', and in continuation of the letter from this house, dated 22nd ultimo, covering reports from Professor Tyndall and Mr. Valentin thereupon,* I am now directed to forward copy of (1) a memorandum from Mr. Douglass† (from which all questions of expense have been by request of the Elder Brethren excluded), and of (2) some further remarks from Dr. Tyndall,‡ and to submit the following observations from the Elder Brethren upon the whole investigation, which it will be remembered was originally undertaken at the instance of the Board of Trade.

It will be seen on perusal of the various reports that gas when very carefully made, and from the best variety of gas-making coal, has given, through a section of the largest dioptric apparatus which the lantern of an ordinary lighthouse tower can hold, a light from a 28-jet burner equal on the eye of the mariner (after its transmission through the medium of the intervening atmosphere, which seems to the Elder Brethren its true measure of value) to that of a 4-wick oil lamp, and with a 48-jet gas burner to an oil lamp of 6 wicks,§ but that on shore and tested photometrically, the naked flames of the gas in each case were considerably superior.

The first question that arises, therefore, is whether there was anything in the lenticular apparatus through which the gas flames were transmitted seaward to account for the fact that therefrom their results were only equal, instead of being as in the land experiments, superior to the oil.

It will be perceived from Dr. Tyndall's last report that he has some such expectation, inasmuch as he regrets the impossibility of interchanging the illuminants during the experiments, and has submitted a photometric observation by Mr. Grubb, of Dublin (herein enclosed), of the portions of the flames in a 28-jet burner above the height of 4 inches from the tips of the jets, which by no means accounts for the results through the apparatus.

It does not, however, appear to the Elder Brethren that Mr. Grubb's observation is conclusive as to any defeat in the lens; because not only may the portion of the flame which he treated as exfocal have been less (for aught that appears), both in volume and intensity, than that 4 inches from the tips of the jets which was included in the photometric measurements at Haisbro', but also because the gas flames may have an inferior degree of intensity *within* the 4 inches, upon the best horizontal plane available for the focus of a dioptric apparatus.

Before the experiments at Haisbro' were begun, Mr. Douglass consulted Mr. Wigham as to what he considered the brightest part of the gas flame, and had that carefully adjusted to the sea-horizon focus to Mr. Wigham's satisfaction; and from the dioptric instruments at the two lighthouses being the separate halves of that which as an entire apparatus was selected for its efficiency as a proof of Messrs. Chance's skill, at the Paris Exhibition of 1867, the Elder Brethren are disposed to think that the moiety

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* See page 37. † See page 49. ‡ See page 53.

§ The oil used was colza, but the results in the Trinity House burners of colza and paraffin are identical.

used for the exhibition of gas was not exceptionally unsuitable, nor in any way inferior to the other; and that the cause of the waste is to be found in the larger size and less condensed character of the flame and its consequent unfitness for any dioptric apparatus that could be got into an existing lighthouse tower; and that if gas is ever to justify its photometric value practically it must be by improved burners constructed with especial regard to focal concentration.*

To meet any doubt upon this point it will be easy when the second light at Haisbro is converted to gas (a change which the Elder Brethren, as will be seen hereafter, desire to make), to determine whether the two dioptric instruments are of equal value, and also in what way another peculiarity (the reflectors at the back of the apparatus in both towers) to which Dr. Tyndall alludes, has affected, if at all, the comparison.†

But whatever may be the results of these investigations it will be universally admitted that the value of gas as an illuminant is not so much that it can be made to equal or even to transcend the 4 and 6 wicks oil lamps, as that it can be so easily increased so far beyond them by the almost instantaneous substitution of burners up to that of 108 jets (which in Dr. Tyndall's opinion marks the upper practical limit in existing apparatus), and that beyond this again it admits of a further accumulation of light in a lighthouse lantern by the use of several lamps in modifications of apparatus in which the upper and lower prisms, designed by Fresnel to utilise as far as practicable every portion of the light, are sacrificed, but wherein three annular belts, one above the other, with a 108-jet burner in each are employed at once, and that such accumulation of power represents the proportion as at present established, of 1,557 for the gas against 220 for the oil, as given in the table appended to the report of Mr. Douglass, where the gas is only credited with the practical value which at Haisbro' it has been found hitherto to show; and although, if comparisons be made of its relative value for revolving lights or where in fixed or occulting lights a clean and sharp transition from white to coloured sectors may be necessary to mark special dangers, it is not (owing to its present want of focal compactness) so proportionately successful, its facility of duplication gives it for revolving lights, in its highest form, an actual superiority; the proportions being where a sharp sector is wanted, oil = 63 against 25 only for the 108-jet gas, but for revolving lights oil = 1,886 against 108-jet gas, 2,542, and if triform 5,338.

It has also a noteworthy peculiarity in the ease with which it can give emphasis to a flash by the instantaneous withdrawal of the light on turning down the gas, and its as instantaneous re-appearance on turning it up again, and although by the use of occulting screens with oil, or by arrangements (with another illuminant), of the dioptric apparatus the same effect, which is a valuable one, may be produced, it can undoubtedly be done very easily, and as far as occulting lights are concerned, very economically by gas; and it should be added generally, that in rapidity of lighting up to full power, in easy maintenance of standard flame throughout the night, and in general facility of manipulation after it is once conveyed to the lantern, it is preferable to oil.

On the other hand, with every wish to recognise these merits, the Elder Brethren are bound, when the question of intensity arises, to remember that there exists a third illuminant apparently limitless as to its cumulative force, and so perfectly adapted to the best instruments for the accurate distribution of light, that, as respects stations where the greatest power of the oil light is deemed inadequate, the problem appears to be whether it is well to pause contented with what seems to the Elder Brethren a rude and imperfect middle course, or proceed to the use of the most powerful illuminant known, which is also perfect on those points in which the gas is most deficient, and as they think represents in a very forcible way the superiority of scientific and, in that sense, economic adaptation of means to an end, as contrasted with a mere accumulation of a material which, in its conversion from the old coal fire, has unfortunately not yet lost the wasteful element of unavailable bulk. A reference to the

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* It may also here be observed that the apparatus used for the oil flame was not adjusted to the improved 4-wick lamp which was used, nor to the 6-wick burner, and that had this been done an appreciable improvement in the effect of the *Oil* would have been the result.

† It will be observed that Dr. Tyndall in his last Report directs the attention of the Elder Brethren to the difference between the photometric results of Mr. Douglass at Westminster and those of Mr. Valentin at Haisbro'. In the present investigation the photometric figures of Mr. Valentin have been unreservedly accepted by Mr. Douglass himself, and therefore the difference does not appear to have any present value, but the discrepancy is doubtless to be found partly in the inferior quality of the London gas, and partly in the relatively effective way in which, although on both occasions in charge of the patentees, the burners (assuming them to be equal in construction) must have been manipulated.

Engineer's Table will show that for a fixed light the 108 jets of gas give proportions of 742 against 935 for electric, or, converted into the triform, of 1,557 against a double power of electric of 1,870; that when a sector is wanted, electricity has a value for accuracy of 880 against 25 in gas, and that for revolving, the present highest available power of gas (triform 108) is only 5,338 against 24,520. And now that in the electric system the competition of inventors and the substitution of the caloric engine for steam will, by reducing the expense of working, bring it nearer to a level as respects economy with gas, and the improvements in the machines, and, notably, in the lamps, render it practically safe and easy, it cannot be left out of consideration; although like the gas, it will have to confront the question as to where the use of Light, which at its best is so soon overpowered by fog, should cease and that of Sound commence. On reference to the Meteorological Records of this Board it would appear that for about 305 nights in the year the ordinary oil light is adequate to send its beams to the horizon, and if in the remaining periods, or in a large portion of it, the weather is such as to prevent the determination of the position of the sun by day and to render any light of little or no use at night, it becomes doubtful whether, instead of the expense of any advance upon the oil lamp (which is so simple, safe, portable, and suitable for the conditions of every station) the alternative of a fog signal, which would be useful by day as well as by night, should not be resorted to; and to the settlement of this question the recent knowledge gained by the valuable assistance of Dr. Tyndall as to the use and power of fog signals will afford a most valuable contribution.*

As repects the relative cost of gas the accounts herewith transmitted afford a general assurance (having regard to the revenue derivable from light dues) that there is nothing (assuming that no unreasonable claim for royalty for using the present form of burners arises) to prevent its adoption at accessible stations whenever the interests of the mariner may demand it, but as respects details too much reliance should not be placed upon figures affected by varying conditions and necessarily approximate only.

After eliminating certain very heavy items on the part of Messrs. Edmundson for conducting the experiments, and some other exceptional expenses, it will be seen by reference to the various statements that the total cost of the plant, &c. at Haisbro' has amounted to about 1,770*l.*† convertible into an annual per-centage of about 117*l.*, to which should be added about 46*l.* 16*s.* the wages of the gas-maker, the value of the coal (which at Haisbro' has cost 57*s.* 6*d.* per ton), being of course set against that of the oil, and the wages, &c. of the light-keepers being factors common to both systems.

It would, as Dr. Tyndall and Mr. Valentin point out, not be fair to charge the full per-centages representing the plant at Haisbro' upon the 28-jet burner, although to enable gas to possess and exercise its most valuable power, that of duplication, the whole expenses would be incurred, and it may be, as Dr. Tyndall observes, that Mr. Douglass hopes to effect some saving (although it can be but trifling) by allowances to keepers in lieu of gas-makers' wages,—if that work should not interfere with the due performance of their nightly duties,—by a method analogous to that by which keepers' wives are paid to assist them in the combined duties of a light and fog station, and allowed 15*l.* per annum each for doing so; but it has been thought that the fairest approximate comparison that can be at present made will be to assume the annual production from the gas of a normal light of 28 jets during clear weather, increased to the 108 jets in times of fog, as against the 6-wick lamp burning relatively half and full power, and the result is a total cost, for the paraffin light for the twelve months, of 340*l.* 0*s.* 4*d.*; for colza, 390*l.* 17*s.* 3*d.*; and for the gas, 448*l.* 0*s.* 11*d.* or of 575*l.* 11*s.* 3*d.* if the triform be used,—with results to the mariner as enumerated in the Engineer's Table.

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* Very instructive evidence of the power of thick weather to obscure light will be found in the columns of the accompanying table which relate to the observations of the high light at Haisbro' from the low one, and a notable instance of the same thing has just occurred elsewhere. The "Galatea" with a Committee on board was running in from the East Goodwin lightship, and although the Low South Foreland electric light was burning with its usual brilliancy no trace whatever was seen of the High light thereat, and on communicating with the South Sand Head lightship she reported that this condition had existed for an hour previously. As the low light and the town lights of Dover were seen, and as the High light afterwards burst out with its usual power, it was thought advisable to investigate the circumstance at the station, when it was found that the upper light, burning as usual, had been in dense fog and for the time totally invisible not only from sea but even from the low light, a distance of four hundred yards.

† It is not known whether this includes any charge for "royalty," as such; the entire apparatus was supplied, including burners, by Messrs. Edmundson for a lump sum.

The Board of Trade will perceive that in Dr. Tyndall's first report great stress is laid upon the importance of distinctiveness in lights, and reference is made to the readiness with which gas would lend itself to the carrying out of Sir W. Thomson's suggested resort to the plan of the late Mr. Babbage, revived with somewhat different details into "combinations of short and long eclipses in accordance with the principle of the Morse "alphabet," and further that in Dr. Tyndall's second report he speaks of mistakes being now so frequent and disastrous. The Elder Brethren cannot agree with their distinguished adviser upon the latter point, which the wreck returns do not appear to them to confirm; and as respects the value of distinctions based upon the Morse alphabet they have already in a letter from this house dated 15th May 1873 gone fully into the question, the conclusions of which they desire to reaffirm. They doubt not that at times when it is least wanted the system may be effective with trained intelligent observers, but it is the duty of the Elder Brethren to provide for other conditions of weather than those suitable for delicate observations, and for thousands of persons who do not come and cannot be brought within the above category.

To every class of sailor, whatever his amount of intelligence may be, the hour of danger is one when simplicity of effect and facility for rapid determination are above all things required, and although the increase in the number of lights is constantly calling for a revision in the methods of distinction (the settlement of which is partly conditional on the determination of the value of intensity previously referred to), the Elder Brethren have other alternatives than a resort to the unsatisfactory refinements of long and short flashes as in the Morse alphabet, or any application of eclipses other than those now recognised for revolving lights, or in fact to spell, where the loss of one letter (if it may be so called) may produce an effect the reverse of that intended, and lead consequently to danger and disaster; and beyond requiring the mariner in very crowded navigation to count two or three flashes of equal duration grouped together, as it were, at the beginning of each minute or half minute, they trust they may never need to put responsibilities of difficult identification upon those who could not be universally, and therefore not effectually, able to respond to them.

As regards their own immediate action in relation to the use of gas the Elder Brethren direct me to say that having regard to the existence of the plant for making it at Haisbro', they would propose (assuming that no difficulty as to royalty should occur with the patentees of the present form of burners) at once to prepare estimates for the conversion of the second light so as to make the entire establishment a gas station, and the more readily because there is no present intention of establishing a fog signal thereat. They will then have the opportunity of learning more of the value of its higher powers in relation to fog, and possibly, of its application to intermittent lights; and of advancing its utility generally by improvements in details, as in recent years both oil and electricity have been improved and simplified; and finally, if called on to advise the Board of Trade in that respect they would be prepared, in deference alike to the wishes of the Irish Board and to the strong opinion in its favour of their valued adviser Dr. Tyndall, to recommend that the Irish Commissioners who take so great an interest in it should have authority for the expenses of proceeding further with its development, using in doing so the best coal, and giving special attention to the determination of the value in fog of the sudden flash when given with the triform powers, and to those points of focal concentration in which it still admits of much improvement.

I am, &c.
ROBIN ALLEN.

The Assistant Secretary,
Harbour Department,
Board of Trade, S.W.

STATEMENT showing the Annual Cost of a 28-jet-gas Burner, as exhibited at the Haisbro' High Lighthouse.

	£ s. d.	£ s. d.	£ s. d.
Wages, &c.—1 Principal keeper		70 10 0	
1 Assistant do.		56 0 0	
Uniform clothing		5 11 0	
Coals.—8½ tons per man per annum at 27*s.* 9*d.*		23 11 9	
			155 12 9
Cost of making Gas:—*			
Man's wages, 52 weeks at 18*s.*		46 16 0	
22 tons cannel coals at 57*s.* 6*d.*		63 5 0	
(To make 226,776 cubic feet of gas, being the consumption of 4,412 hours at 51·4 per hour.)			
Breeze coal		9 2 6	
Lime for purifiers		1 0 7	
Lighting and cleaning stores		3 16 2	
			124 0 3
Cost of the buildings erected for the purposes of making gas thereat (R. Cornish's contract)*	455 0 0		
Proportion of extra works, gas holder, retort, benches, &c.	246 17 6		
Superintendence during construction	55 0 0		
Repairs and renewals at 4 per cent.	756 17 6		30 5 6
Edmundson & Co., supplying and erecting gas apparatus, &c.	765 1 0		
Extras to ditto, to put the same in a thoroughly efficient state	77 14 5		
Repairs and renewals at † 9⅜ per cent. on	842 15 5		79 0 2
Cost of photometer	67 11 5		
Interest for repairs and renewals at 5 per cent.		3 7 6	
4 per cent. on 106*l.*, being the cost of a 6-wick burner to be provided in case of emergency		4 11 7	
			7 19 1
			396 17 9

Or 1*s.* 9$\frac{9}{16}$*d.* per hour.

Countersigned,
ROBIN ALLEN, Secretary.

H. L. FARRER, Accountant.

STATEMENT showing the Annual Cost of a 48-jet-gas Burner as exhibited at the Haisbro' High Lighthouse.

	£ s. d.	£ s. d.	£ s. d.
Wages, &c.—1 Principal keeper		70 10 0	
1 Assistant ditto		56 0 0	
Uniform clothing		5 11 0	
Coals.—8½ tons per man per annum at 27*s.* 9*d.*		23 11 9	
			155 12 9
Cost of making Gas :—			
Man's wages, 52 weeks at 18*s.*		46 16 0	
39$\frac{4}{10}$ tons cannel coals at 57*s.* 6*d.*		112 14 0	
(To make 411,198 cubic feet of gas, being the consumption of 4,412 hours at 93·2 feet per hour.)			
Breeze coal		9 2 6	
Lime for purifiers		1 17 0	
Lighting and cleaning stores		3 16 2	
			174 5 8
Cost of the buildings erected for the purposes of making gas thereat (R. Cornish's contract)	455 0 0		
Proportion of extra works, gas-holder, retort, benches, &c.	246 17 6		
Superintendence during construction	55 0 0		
Repairs and renewals at 4 per cent on.	756 17 6	30 5 6	
Carried over	30 5 6	329 18 5	

* To be taken with some reservation because these arrangements would produce more gas in 12 months than is wanted for a 28-jet burner. See remarks in report and letter.—R. A.

† 9*l.* 7*s.* 6*d.* per cent. 7*l.* 10*s.* per cent. is said to be customary for renewals of gas apparatus, but regard being had to isolation of lighthouse stations 25 per cent. has been added—

£	s.	d.	
	7	10	0
25 per cent.	1	17	6
9	7	6	per cent.

Statement showing the Annual Cost of a 48-Jet-gas Burner, as exhibited at the Haisbro' High Lighthouse—*continued.*

	£ s. d.	£ s. d.	£ s. d.
Brought over -		30 5 6	329 18 5
Edmundson & Co., supplying and erecting gas apparatus, &c. -	765 1 0		
Extras to ditto, to put the same in a thoroughly efficient state -	77 14 5		
Repairs and renewals at 9⅜* per cent. on - - - - -	842 15 5	79 0 2	
Cost of photometer - - - - - - - - -	67 11 5		
Interest for repairs and renewals at 5 per cent. - - - -		3 7 6	
4 per cent. on 106*l.*, being the cost of a 6-wick burner to be provided in case of emergency - - - - -		4 11 7	
			117 4 9
			447 3 2

Or 2*s.* 0¼*d.* per hour.

Countersigned,
Robin Allen, Secretary. H. L. Farrer, Accountant.

Statement showing the Estimated Annual Cost of a 4-wick Burner burning Paraffin Oil if exhibited at the Haisbro' High Lighthouse.

	£ s. d.	£ s. d.	£ s. d.
Wages, &c.—1 Principal keeper - - - - - - - -		70 10 0	
1 Assistant ditto - - - - - - - -		56 0 0	
Uniform clothing - - - - - - - -		5 11 0	
Coals.—8½ tons per man per annum at 27*s.* 9*d.* - - - - -		23 11 9	
			155 12 9
Cost of oil store necessary for storing paraffin - - -	£200		
Plant account, 4 per cent. on - - - - -	,,		8 0 0
Oil and lighting stores :—			
998 gallons paraffin oil at † 2*s.* 2*d.* per gallon - - - - -		108 2 4	
Wicks - - - - - - - - - -		2 1 0	
Glass cylinders - - - - - - - - -		1 16 0	
Lighting stores - - - - - - - - -		3 16 2	
Plant account, 4 per cent. on 84*l.* - - - - - -		3 10 0	
Repairs and renewals at 9⅜ per cent. on 84*l.* - - - - -		7 17 6	
			127 3 0
			290 15 9

Or 1*s.* 3$\frac{9}{11}$*d.* per hour.

Countersigned,
Robin Allen, Secretary. H. L. Farrer, Accountant.

Statement showing the Estimated Annual Cost of a 6-wick Burner burning Paraffin Oil if exhibited at the Haisbro' High Lighthouse.

	£ s. d.	£ s. d.	£ s. d.
Wages, &c.—1 Principal keeper - - - - - - - -		70 10 0	
1 Assistant ditto - - - - - - - -		56 0 0	
Uniform clothing - - - - - - - -		5 11 0	
Coals.—8½ tons per man per annum at 27*s.* 9*d.* - - - - -		23 11 9	
			155 12 9
Cost of oil store necessary for storing paraffin - - -	£200		
Plant account, 4 per cent. on - - - - -	,,		8 0 0
Oil and lighting stores :—			
2,447 gallons paraffin oil at 2*s.* 2*d.* per gallon ‡ - - - -		265 1 10	
Wicks - - - - - - - - - -		5 1 0	
Glass cylinders - - - - - - - - -		3 10 0	
Plant account, 4 per cent. on 106*l.* - - - - - -		4 11 7	
Lighting stores - - - - - - - - -		3 16 2	
Repairs and renewals, 9⅜ per cent. on 106*l.* - - - - -		9 18 9	
			291 19 4
			455 12 1

Or 2*s.* 0¾*d.* per hour.

Countersigned,
Robin Allen, Secretary. H. L. Farrer, Accountant.

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* 9*l.* 7*s.* 6*d.* per cent. 7*l.* 10*s.* per cent. is said to be customary for renewal of gas apparatus, but regard being had to isolation of lighthouse stations 25 per cent. has been added—

	£	s.	d.
	7	10	0
25 per cent.	1	17	6
	9	7	6 per cent.

† This charge includes 8*d.* per gallon for delivery at stations and is exceptional, and it is estimated that in future 1*s.* 9*d.* per gallon (1*s.* 6*d.*, and delivery, &c. 3*d.*) will cover total cost; this will reduce the item for oil to 87*l.* 6*s.* 6*d.*—R. A.

‡ Includes 8*d.* per gallon for delivery at stations; it is estimated that in future 1*s.* 9*d.* per gallon will cover all charges and reduce the item for oil to 214*l.* 2*s.* 3*d.*—R. A.

STATEMENT showing the Annual Cost of a 4-wick Burner burning Rape Oil as exhibited at the Haisbro' High Lighthouse.

	£ s. d.	£ s. d.
Wages, &c.—1 Principal keeper	70 10 0	
1 Assistant ,,	56 0 0	
Uniforms for keepers	5 11 0	
Coals.—8½ tons per annum to each keeper, at 27*s.* 9*d.*	23 11 9	
		155 12 9
Oil and lighting stores :—		
Rape oil, 998 gallons, at 2*s.* 8½*d.**	135 2 4	
Wicks	2 1 0	
Cylinders	1 16 0	
Lighting stores	3 16 2	
Plant account 4 per cent. on 84*l.*	3 10 0	
Repairs and renewals, 9⅜ per cent. on 84*l.*	7 17 6	
		154 3 0
		309 15 9

1*s.* 4⅞*d.* per hour.

Countersigned,
ROBIN ALLEN, Secretary.

H. L. FARRER, Accountant.

STATEMENT showing the Annual Cost of a 6-wick Burner burning Rape Oil as exhibited at the Haisbro' High Lighthouse.

	£ s. d.	£ s. d.
Wages, &c.—1 Principal keeper	70 10 0	
1 Assistant ,,	56 0 0	
Uniforms for keepers	5 11 0	
Coals.—8½ tons per annum to each man, at 27*s.* 9*d.*	23 11 9	
		155 12 9
Oil and lighting stores :—		
Rape oil, 2,447 gallons at 2*s.* 8½*d.**	331 7 4	
Wicks	5 1 0	
Cylinders	3 10 0	
Plant account, 4 per cent. on 106*l.*	4 11 7	
Repairs and renewals, 9⅜ per cent. on 106*l.*	9 18 9	
Lighting stores	3 16 2	
		358 4 10
		513 17 7

2*s.* 3⅞*d.* per hour.

Countersigned,
ROBIN ALLEN, Secretary.

H. L. FARRER, Accountant.

ESTIMATED EXPENSE for maintaining Gas at a Lighthouse using the 28-jet Burner, during 305 nights of 3,692 hours, and the 108-jet for the remaining 60 nights of 720 hours, the total time being taken as per Mr. Valentin's report.

	£ s. d.	£ s. d.	£ s. d.
Cost of buildings and necessary plant, gas house, gas-holder, retort benches, and superintendence during construction, &c.	756 17 6		
Repairs and renewals, at 4 per cent.		30 5 6	
Cost of apparatus and its erection	765 1 0		
Station meter and addition to gas-holder	77 14 5		
Interest for repairs and renewals, at 9⅜ per cent.†	842 15 5	79 0 2	
Carried over		109 5 8	

* Contract price — £ 0 2 5½
Add for delivery, &c. &c. — 0 0 3
0 2 8½

† 9*l.* 7*s.* 6*d.* per cent. 7*l.* 10*s.* is said to be customary for renewal of gas apparatus, but regard being had to isolation of light-house stations 25 per cent. has been added :—

	£ s. d.
	7 10 0
25 per cent.	1 17 6
	9 7 6 per cent.—R. A.

Estimated Expense for maintaining Gas at a Lighthouse using the 28-jet Burner, &c.—*continued.*

	£ s. d.	£ s. d.	£ s. d.
Brought forward -		109 5 8	
Cost of photometer	67 11 5		
Repairs and renewals, at 5 per cent.		3 7 6	
Cost of 6-wick burner in case of emergency	106 0 0		
Repairs and renewals, at 4 per cent.		4 11 7	
			117 4 9
Cost of making gas:—			
Gas-makers' wages, 52 weeks at 18*s.*			46 16 0
22 tons of cannel coal, at 57*s.* 6*d.*	63 5 0		
(To make 226,776 cubic feet of gas, being the annual consumption of a 28-jet-gas burner.)*			
Breeze coal, 9*l.* 2*s.* 6*d.*, lime for purifiers, 1*l.* 0*s.* 7*d.*	10 3 1		
Lighting and cleaning stores	3 16 2		
Total annual cost -	77 4 3		
If then a 28-jet-gaslight is burnt for 3,692 hours it would cost -			64 12 3
$129\frac{4}{10}$ tons of cannel coal, at 57*s.* 6*d.*	372 0 6		
(To make 1,358,896 cubic feet of gas, being the annual consumption of a 108 jet-gas burner.)*			
Breeze coal, 9*l.* 2*s.* 6*d.*, lime for purifiers, 2*l.* 18*s.* 0*d.*	12 0 6		
Lighting and cleaning stores	3 16 2		
Total annual cost -	387 17 2		
If, then, a 108-jet-gaslight is burnt for 720 hours it would cost -			63 15 2
Wages.—1 Principal keeper	70 10 0		
1 Assistant do.	56 0 0		
Uniform clothing	5 11 0		
Coals.—$8\frac{1}{2}$ tons per man per annum	23 11 9		
			155 12 9
Or 2*s.* $0\frac{3}{8}$*d.* per hour.			448 0 11
If the triform be used during the 720 hours, it will add -			127 10 4
			575 11 3

Making 2*s.* $7\frac{1}{4}$*d.* per hour.

Countersigned,
Robin Allen, Secretary.

H. L. Farrer, Accountant.

Estimated Expense for maintaining a 6-wick Oil Light burning at half power during 305 nights of 3,692 hours, and at full power for the remaining 60 nights of 720 hours, the total time being taken as per Mr. Vallentin's report.

	£ s. d.	£ s. d.	£ s. d.
Oil and lighting stores:—			
2,447 gallons paraffin, at 2*s.* 2*d.*†	265 1 10		
Wicks, 5*l.* 1*s.*, cylinders, 3*l.* 10*s.*, lighting stores, 3*l.* 16*s.* 2*d.*	12 7 2		
Total annual cost of a 6-wick burner -	277 9 0		
If then a 6-wick burner is used for 3,692 hours, it would cost 232*l.* 3*s.* 5*d.*, or at half power, say -			116 11 8
And if for 720 hours it be burnt at full power -			45 5 7
Four per cent. on 106*l.* cost of 6-wick lamp with three spare burners		4 11 7	
$9\frac{3}{8}$ per cent. on 106*l.* for repairs and renewals -		9 18 9	
			14 10 4
Cost of oil store necessary for storing paraffin -	£200		
4 per cent. on	,,		8 0 0
Wages.—1 Principal keeper		70 10 0	
1 Assistant do.		56 0 0	
Uniform clothing		5 11 0	
Coals.—$8\frac{1}{2}$ tons per man per annum		23 11 9	
			155 12 9
Or 1*s.* $6\frac{1}{2}$*d.* per hour.			340 0 4

* In the accounts of Commercial Gas Companies there is always an allowance for leakage and waste between retort and burner, but this has not been taken into account in the above calculations.

† This includes a very heavy charge for delivery by contractor at stations; it is believed that in future total cost will not exceed 1*s.* 9*d.* per gallon, *i.e.*, oil 1*s.* 6*d.*, delivery, &c. 3*d.*, and will reduce this item to 214*l.* 2*s.* 3*d.*

Estimated Expense for maintaining a 6-wick Oil Light burning at half power during 305 nights of 3,692 hours, &c.—*continued.*

	£	s.	d.	£	s.	d.
If colza be used it will be, at half power for 3,692 hours - -	149	17	9			
and full power for 720 hours - -	58	9	3			
Wages, &c., as before - - -	182	10	3			
				390	17	3

Countersigned,
Robin Allen, Secretary.

H. L. Farrer, Accountant.

HAISBRO' LIGHTS.

Return as to the Results of using the 68, 88, and 108 Jet Gas Burners at the High Light, and the Six Wick Oil Burner at the Low Light in Thick Weather.

Date. 1874.		Return from High Light.		Return from Low Light.		Visibility of High (Gas) Light from Low Tower. (Half a Mile distant.)	Visibility of Low (Oil) Light from High Tower. (Half a Mile distant.)	Observations from Haisbro' Light-vessel, distant Nine Miles.		Observations from Newarp Light-vessel, distant 13½ Miles.	
		Weather.	Gas Power used.	Weather.	Oil Burner used.			Weather.	Visibility of Haisbro' Lights.	Weather.	Visibility of Haisbro' Lights.
Day.	Hour.		Jets.		Wick.						
Jan. 10	5 0 p.m.	Misty and showery.	68	Fog and rain.	6	Indistinct -	Indistinct -	Misty rain.	Not visible -	Overcast. Rain.	Not visible.
„ 11	3 0 a.m.	Misty -	68	Fog -	„	Not visible -	„ -	Fog -	„ -	Misty -	„
„ 18	8 30 p.m.	O. M. R. -	68	C. M. R.	4	Visible -	Visible -	Clear -	Visible -	Clear -	Visible.
„ 22	6 30 „	Fog - -	108	Foggy -	6	Not visible -	Not visible -	Fog -	Not visible -	Fog -	Not visible.
„ 28	9 0 „	Misty - -	68	Misty -	„	Visible -	Indistinct -	Misty -	„ -	Misty -	„
Feb. 4	9 10 „	„ - -	108	„ -	„	Indistinct -	Visible -	„ -	„ -	„ -	„
„ 4	10 10 „	„ - -	68	„ -	„	„ -	„ -	„ -	„ -	„ -	„
„ 4	11 50 „	Fog - -	108	Fog -	„	Not visible -	Not visible -	„ -	„ -	„ -	„
„ 5	2 30 a.m.	„ - -	68	„ -	„	Indistinct -	Indistinct -	„ -	„ -	Foggy -	„
„ 5	4 40 „	„ - -	108	„ -	„	Not visible -	Not visible -	Fog -	„ -	„ -	„
„ 5	4 29 p.m.	„ - -	68	„ -	„	„ -	„ -	„ -	„ -	„ -	„
„ 5	6 [illegible] „	„ - -	108	„ -	„	„ -	„ -	„ -	„ -	„ -	„
„ 20	9 [illegible] „	„ - -	108	„ -	„	„ -	Indistinct -	Misty -	„ -	„ -	„
„ 28	11 30 „	Very misty -	68	„ -	„	„ -	Not visible -	„ -	„ -	Misty -	„
„ 29	12 30 a.m.	„ -	88	„ -	„	„ -	„ -	„ -	„ -	Foggy -	„
„ 29	2 40 „	„ -	108	„ -	„	„ -	„ -	Foggy -	„ -	„ -	„
Mar. 5	11 45 p.m.	„ -	68	„ -	„	Visible -	Visible -	„ -	„ -	„ -	„
„ 6	2 15 a.m.	„ -	108	„ -	„	Not visible -	„ -	„ -	„ -	„ -	„
Apr. 26	2 0 „	Fog - -	108	„ -	„	„ -	Not visible -	„ -	„ -	„ -	„
„ 26	7 3 p.m.	„ - -	68	„ -	„	Indistinct -	„ -	„ -	„ -	„ -	„
„ 26	9 0 „	„ - -	108	„ -	„	Not visible -	„ -	„ -	„ -	„ -	„
„ 27	1 30 a.m.	„ - -	88	„ -	„	„ -	„ -	„ -	„ -	„ -	„
May 24	7 48 p.m.	„ - -	68	„ -	„	Indistinct -	Indistinct -	Misty -	„ -	„ -	„
„ 24	9 0 „	„ - -	108	„ -	„	Not visible -	Not visible -	„ -	„ -	„ -	„
Aug. 19	10 45 „	Misty - -	68	„ -	„	Indistinct -	Indistinct -	„ -	„ -	Misty -	„
„ 19	11 30 „	„ - -	88	Misty -	„	Visible -	Visible -	„ -	„ -	„ -	„
„ 20	9 30 „	„ - -	108	„ -	„	„ -	„ -	Fog -	Not visible -	Fog -	„
„ 20	11 0 „	„ - -	68	„ -	„	„ -	„ -	Cloudy	Visible -	„ -	„
Sept. 6	1 30 a.m.	„ - -	68	„ -	„	„ -	„ -	Clear -	„ -	Clear -	Visible.
„ 16	6 0 p.m.	Very misty -	68	Very misty.	„	Indistinct -	Indistinct -	Misty -	Not visible -	Misty -	Not visible.
„ 27	10 45 „	„ -	88	„	„	„ -	„ -	Cloudy	Visible -	„ -	„
„ 27	11 45 „	„ -	68	„	„	„ -	„ -	„ -	„ -	„ -	„
„ 30	2 25 „	Misty rain -	68	Misty rain.	„	Visible -	Visible -	Storm, T. & L.	Not visible -	Overcast. Rain.	„
Oct. 12	2 40 „	Foggy -	108	Misty -	„	Indistinct -	Indistinct -	Misty -	„ -	Cloudy -	„
„ 12	11 15 „	„ -	68	„ -	„	„ -	„ -	„ -	„ -	„ -	„
„ 25	11 50 „	Fog - -	88	„ -	„	Visible -	Not visible -	Misty rain.	„ -	Drizzling rain.	„
„ 26	1 15 a.m.	„ - -	68	„ -	„	„ -	Visible -	„ -	„ -	„ -	„
„ 27	3 0 „	Misty - -	68	„ -	„	„ -	„ -	Misty -	„ -	Misty -	„
„ 28	4 21 p.m.	Fog - -	108	Fog -	„	Not visible -	Not visible -	Fog -	„ -	Fog -	„
„ 28	8 0 „	„ - -	68	„ -	„	„ -	„ -	„ -	„ -	„ -	„
„ 29	4 19 „	Very misty -	68	„ -	„	Indistinct -	Indistinct -	Misty -	„ -	Misty -	„
Nov. 3	3 20 a.m.	Thick fog -	108	„ -	„	Not visible -	Not visible -	„ -	„ -	„ -	„
„ 3	4 10 „	„ -	68	„ -	„	„ -	„ -	„ -	„ -	„ -	„
„ 3	4 45 „	„ -	108	„ -	„	„ -	„ -	„ -	„ -	„ -	„
„ 5	12 40 „	Very misty -	88	„ -	„	Indistinct -	Indistinct -	Fog -	„ -	Foggy -	„
„ 5	2 0 „	„ -	68	„ -	„	„ -	„ -	„ -	„ -	„ -	„
„ 5	5 40 „	Thick fog -	88	„ -	„	Not visible -	Not visible -	„ -	„ -	„ -	„
„ 5	10 20 p.m.	„ -	68	„ -	„	„ -	„ -	„ -	„ -	„ -	„
„ 6	12 15 a.m.	„ -	108	„ -	„	„ -	„ -	„ -	„ -	„ -	„
„ 6	4 15 „	Foggy -	68	„ -	„	„ -	Indistinct -	„ -	„ -	„ -	„
„ 7	12 10 a.m.	„ -	88	Misty -	„	Indistinct -	„ -	„ -	„ -	„ -	„
„ 7	2 0 „	Misty - -	68	„ -	„	Visible -	Visible -	„ -	„ -	„ -	„
Dec. 22	3 0 „	Fog - -	*	Fog -	„	Not visible -	Not visible -	Mist -	„ -	Mist -	„
„ 26	9 0 p.m.	„ - -	*	„ -	„	„ -	„ -	„ -	„ -	Fog -	„
„ 28	6 0 „	„ - -	*	„ -	„	„ -	„ -	Fog -	„ -	„ -	„
„ 31	6 0 a.m.	Thick fog -	*	„ -	„	„ -	„ -	„ -	„ -	„ -	„

* The exact power used on each of these days is not stated, but it is evident from the unusual quantity of gas consumed that high powers were used.

Board of Trade (Harbour Department),
Whitehall Gardens, S.W., 6 Feb. 1875.

SIR,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 30th ultimo on the subject of the experiments with gas at Haisbro', which with the papers enclosed will receive the attentive consideration of this department.

In the meantime the Board are prepared, as proposed in the concluding paragraph of your letter, to accord their sanction to the conversion to gas of the second light at Haisbro', provided that arrangements satisfactory to the Elder Brethren of the Trinity House and the Board of Trade can be made with Mr. Wigham as to the royalty to be paid for his burners.

I am, &c.
(Signed) C. CECIL TREVOR.

The Secretary, Trinity House.

LONDON:
Printed by GEORGE E. EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty.
For Her Majesty's Stationery Office.

COPIES of REPORTS to the BOARD of TRADE by the TRINITY HOUSE of DEPTFORD STROND, and the COMMISSIONERS of IRISH LIGHTS, of their Inspection of LOCAL LIGHTHOUSES, BUOYS, and BEACONS (in continuation of Parliamentary Paper, No. 288, of Session 1874).

Board of Trade,
2 July 1875.

T. H. FARRER.

(*PRESENTED PURSUANT TO ACT 25 & 26 VICT. c. 63 s. 43.*)

Ordered, by The House of Commons, *to be Printed,*
5 July 1875.

COPIES of Reports to the Board of Trade by the Trinity House of Local Lighthouses,

No. 1. - - - - - - - - -

(H.—386.)

RETURN of Inspection of Local Lights, &c., by Corporation of

NAME OF LIGHT, &c.	Date of Visit.	Local Authority.	Light.		Height above High Water.	Lantern.	Source of Light.	
			Character.	System.		Ventilation and Cleanliness.		
	1874:				*Feet.*			
Boston - - - - -	25 April -	Boston Harbour Commissioners.	- -	- -	-	- - -	- -	1
Wainfleet - - - -	25 April -	- - ditto - - -	- -	- -	-	- - -	- -	2
Wisbeach - - - -	24 April -	Wisbeach Harbour Commissioners.	There are 14 beacons, with diamonds of wicker-work, on port hand, and bushes on starboard hand, which mark the channel, and from which lights in hand lanterns are exhibited during the winter time, as required. When exhibited they are sufficient for the purpose.					3
Dover:								
South Pier Head, Western Lights, High.	25 Sept. -	Dover Harbour Board -	Red, fixed -	Catoptric -	-	Sufficient; clean -	Gas -	4
Ditto - - ditto - -	25 Sept. -	- - ditto - - -	- ditto -	- ditto -	-	- - ditto - -	Gas -	5
South Pier Head, Western Low Light.	25 Sept. -	- - ditto - - -	Red, fixed; shown according to state of tide.	- -	-	- - ditto - -	Gas -	6
North Pier - - -	25 Sept. -	- - ditto - - -	- ditto -	- -	-	- - ditto - -	Gas -	7
Eastbourne:								
End of Pier - - -	23 Sept. -	Eastbourne Pier Company	White, fixed -	- -	10	Sufficient and clean	Gas -	8
Looe - - - - - -	17 Sept. -	Looe Harbour Commissioners.	Green - -	Catoptric -	34	Requires cleaning	Gas -	9
Blakeney - - - -	22 April -	Blakeney Harbour Commissioners.	- -	- -	-	- - -	- -	10

DEPTFORD STROND, and the COMMISSIONERS of IRISH LIGHTS, of their Inspection of BUOYS, and BEACONS.

No. 1.

Trinity House, pursuant to the 43rd Section of the Act 25 & 26 Vict. c. 63.

Adjustment and Condition of Lamps and Apparatus.	General Condition of Establishment, and if sufficient for the Purpose or otherwise.	Condition and Efficiency of		Buoys, &c.			RECOMMENDATIONS.
		Fog Signals.	Tide Signals.	Number of Wood or Iron.	Colour, Shape, Condition, &c.	If in best Positions.	
- -	- - - - - -	- -	- - - - -	48 wood and iron.	Black, and black and white striped; nun and can shaped; two wood beacons. In good condition.	Yes.	
				There are also seven small nun buoys used in the river, according to changes of sand.			
- -	- - - - - -	- -	- - - - -	Six wood and iron.	Black, and black and white striped; nun and can shaped; in good condition.	Yes.	
- -	- - - - - -	- -	- - - - -	24 wood -	Red, and red and white; nun and tub shaped; in good condition.	Yes.	
Efficient -	Sufficient for the purpose.	- -	Ball and flag efficient.				
- ditto - -	- - ditto - -						
- ditto - -	- - ditto - -	- -	- - - - -	- -	- -	- -	That these lanterns should be glazed red, and plain white cylinders adopted; but fish-tail burners would render cylinders unnecessary.
- ditto - -	- - ditto - -						
- ditto - -	- - ditto.						
None, and reflector dirty.	Inefficient - -	- -	- - - - -	- -	- -	- -	That an improved lamp and apparatus be substituted.
- -	- - - - - -	- -	- - - - -	24 wood -	Black on starboard hand, and white on port hand; can; all in good order.	Positions shifted as points alter.	
				Three leading beacons of wood, with diamond heads; about 40 small poles for inside navigation, with half diamonds on west side and bushes on east side; also about 40 small pole beacons for the clay channel. Channel is lighted in winter and tide time by lanterns hung to the pole beacons, as occasion requires.			

RETURN of Inspection of Local Lights, &c., by Corporation of

NAME OF LIGHT, &c.	Date of Visit.	Local Authority.	Light.		Height above High Water.	Lantern.	Source of Light.	
			Character.	System.		Ventilation and Cleanliness.		
	1874:				*Feet.*			
BURNHAM OVERY	22 April	Burnham Overy Harbour Board.	-	-	-	-	-	1
LYNN:								
High Light	24 April	Lynn Harbour Commissioners.	White, fixed	-	50	Efficient	Paraffin	2
Low Light	24 April	ditto	ditto	-	30	ditto	ditto	3
PEMBREY, ENTRANCE:								
Burry Port	17 Aug.	Burry Port Dock Commissioners.	Fixed, white	Catoptric	35	Ventilation efficient	ditto	4
LLANELLY:								
South end of Breakwater	17 Aug.	Llanelly Harbour Commissioners.	ditto	ditto	50	Good	ditto	5
MUMBLES LIGHTHOUSE	17 Aug.	Swansea Harbour Trustees	ditto	Dioptric	114	Efficient and clean	Oil	6
SWANSEA:								
Pier Head	17 Aug.	ditto	Fixed, red	ditto	24	Good	Oil	7
PORTHCAWL	19 Aug.	Great Western Railway	Green, white, and red.	ditto	34	Good	Oil	8
CLEVEDON PIER	20 Aug.	Clevedon Pier Company	Fixed, red	-	27	Efficient and clean	Gas	9
WATCHET:								
Breakwater Light	22 Aug.	Watchet Harbour Board	ditto	Catoptric	30	ditto	Gas	10
ILFRACOMBE:								
On Lantern Hill	25 Aug.	Sir Bouchier Wrey, bart.	ditto	ditto	127	Ventilation efficient, and fairly clean.	Gas	11
CARDIFF, BUTE DOCK:								
Pier Head	18 Aug.	Cardiff Dock Commissioners.	Fixed, white	Dioptric	42	Good	Gas	12

Trinity House, pursuant to the 43rd Section of the Act 25 & 26 Vict. c. 63—*continued.*

Adjustment and Condition of Lamps and Apparatus.	General Condition of Establishment, and if sufficient for the Purpose or otherwise.	Condition and Efficiency of		Buoys, &c.			RECOMMENDATIONS.
		Fog Signals.	Tide Signals.	Number of Wood or Iron.	Colour, Shape, Condition, &c.	If in best Positions.	
- -	- - -	- -	- - -	Five wood on starboard hand; outer one with flag on it.	Black, and various shapes; in good condition.	Moved as channel alters.	
				Two floating beacons or poles with flags on port hand; one standing beacon, with broom, on a bank of chalk; one large beacon, with ball, on starboard hand; also four beacons, with triangles for fixing lanterns by night, when required.			
Satisfactory -	Satisfactory, and sufficient for the purpose.	- none -	- - none - -	69 wood and and 16 spar.	Black on starboard hand; black and white striped on port hand; tub and nun shaped; in good condition.	Yes -	That more spare buoys be provided.
- - ditto -	- - ditto - -			Three life and 14 ordinary wood beacons; in good condition.			
Unsatisfactory	Sufficient for the purpose.	- -	- - -	- -	- -	- -	That lantern, lamps, and apparatus be kept cleaner.
Good - -	Good, and sufficient for the purpose.	- -	- - -	Three iron, 12 wood.	Red, black, and particoloured.	Changed as channel alters.	
Good - -	Efficient, and sufficient for the purpose.						
Good - -	- - ditto - -	Bell rung by hand.	Ball.				
Good - -	- - ditto - -	Horn -	Ball by day, two red lights by night.				
Good - -	- - ditto.						
Good - -	- - ditto - -	- -	Black ball.				
Satisfactory -	Sufficient for the purpose.						
Good - -	Efficient, and sufficient for the purpose.	- -	Flag by day and light by night.				

No. 2.

(H.—4204.)

REPORT by COMMISSIONERS of IRISH LIGHTS on Inspection of HARBOUR LIGHTS.

Irish Lights Office, Westmoreland-street,
Sir, Dublin, 27 May 1875.

I AM instructed to forward herewith, for the information of the Board of Trade, copies of Reports made by a committee of this Board, who, under the provisions of the Act 25 & 26 Vict. c. 63, s. 43, inspected the lights, buoys, and beacons under the jurisdiction of the following Local Harbour Authorities:—

Londonderry.	Waterford.
Belfast.	Sligo.
Wexford.	Ballina.
New Ross.	

I am to add that copies of the different Reports have been transmitted to the respective Harbour Authorities.

I am, &c.
(signed) *W. Lees*, Secretary.

The Assistant Secretary,
Harbour Department, Board of Trade.

Enclosure in No. 2.

Wednesday, 24th June 1874.

* * * * Arrived at Derry at 3.30 p.m., and had a conference with the Harbour Authorities relative to the inspection of Lough Foyle. Thursday, 25th June 1874: Proceeded down the lough in a steam tug provided by the Commissioners, accompanied by the Harbour Master; examined all the lights, buoys, and beacons up to Derry. The lights we found clean and in very good order, but the piles supporting some of the light-houses are much in want of repairs, whilst the platforms of others were very much decayed; to this we would call the immediate attention of the Commissioners.

The buoys watched well, and were all in their right positions, but they were very much in want of scraping and painting, as they had been nearly two years in the water; this we would beg to call attention to.

The beacons were in a very good state of preservation.

(signed) *Jas. A. St. Leger*, Captain, R.N.
Thos. Bewley.

Friday, 26th June 1874.

* * * * Left Derry at 10 a.m. and proceeded to Belfast, where we arrived at 2.30 p.m, and at 3 o'clock proceeded down the lough in a steam tug, accompanied by the Belfast Commissioners; inspected all the lights, buoys, and beacons in the lough. We are happy to be able to report that we found them all in most excellent order, and request a report to that effect may be conveyed to the Commissioners of Belfast Harbour.

(signed) *Jas. A. St. Leger*, Captain, R.N.
Thos. Bewley.

Monday, 6th July 1874.

Arrived at Wexford at 1.30 a.m., and proceeded at 2 o'clock in a steamer provided for us, and inspected the buoys and beacons inside the harbour, and outside the banks, being accompanied by the Harbour Master and pilot. We are glad to be able to report that we found them all in most excellent order, the buoys clean and watching well, and in their proper positions.

(signed) *Jas. A. St. Leger*, Captain, R.N.
O. P. Knott, Captain, R.N.
Thos. Bewley.

Tuesday, 7th July 1874.

Left Wexford for New Ross, and arrived there at 1 p.m., where we were met by Mr. Nivins, one of the Waterford Harbour Commissioners, with a steam tug sent from Waterford for our accommodation. At 1.30 p.m. proceeded down the river and examined all the buoys to its junction with the Suir at Check Point, and found them all in very good order.

(signed) *Jas. A. St. Leger*, Captain, R.N.
O. P. Knott, Captain, R.N.
Thos. Bewley.

Tuesday, 7th July 1874.

From New Ross we proceeded down the river to Waterford Quay, examined the buoys and beacons in the old and new channel, and found them in excellent order. The buoys are small for the strong tide which runs in that part of the river. It will be of great advantage to vessels navigating this portion of the river when the contemplated light is placed on the east point of the New Cut, so as to enable them taking either passages. On Wednesday, 8th July 1874, at 11.30 a.m., held a conference with the Harbour Commissioners of Waterford, which was very satisfactory; they were all gratified with the gun at Hook Lower Lighthouse, which they said was often heard at eight miles' distance, and was the greatest service ever conferred on this harbour.

(signed) *Jas. A. St. Leger*, Captain, R.N.
O. P. Knott, Captain, R.N.
Thos. Bewley.

Tuesday, 22nd September 1874.

* * * * Left Dublin by the first train, 8.30 a.m., for the purpose of inspecting Sligo River, and arrived there at 4 p.m. We were met by the Commissioners at the station, when we at once proceeded to examine the buoys, beacons, and marks in the river down to its mouth, and found them all in most excellent order and condition. This is one of the best marked rivers in Ireland, and the Sligo Commissioners are deserving of great credit.

(signed) *Jas. A. St. Leger*, Captain, R.N.
Thos. Bewley.

Wednesday, 23rd September 1874.

* * * * * Left Sligo at 9.30 a.m., and after a drive of six and a-half hours arrived at Ballina at 4 o'clock p.m. In consequence of the absence of the Harbour Master in his steamer, we were unable to examine the marks in the river on that afternoon. Proceeded at 11.30 a.m. on Thursday, 24th September 1874, to inspect the River Moy, but found the steamer aground. At 1 o'clock proceeded down the river and examined the buoys and beacons, and found them in excellent order. This river, which is very difficult, is most excellently marked.

(signed) *Jas. A. St. Leger*, Captain, R.N.
Thos. Bewley.

COPIES of Reports to the Board of Trade by the Trinity House of Deptford Strond, and the Commissioners of Irish Lights, of their Inspection of Local Lighthouses, Buoys, and Beacons (in continuation of Parliamentary Paper, No. 288, of Session 1874).

(*Presented pursuant to Act 25 & 26 Vict. c. 63, s. 43.*)

Ordered, by The House of Commons, *to be Printed,*
5 *July* 1875.

308. *Under* 1 *oz.*

LIGHTHOUSES (MINERAL OILS).

RETURN to an Order of the Honourable The House of Commons, dated 23 July 1875;—*for*,

RETURN "of LIGHTHOUSES and LIGHT VESSELS under the Jurisdiction of the Three General LIGHTHOUSE AUTHORITIES where MINERAL OIL has been or is about to be substituted for COLZA OIL, with the Dates of such Substitution or contemplated Substitution; and of any Expenses attendant on, and any Saving effected by, such Substitution, in the following Form:—

Name of Station where Mineral Oil has been substituted for Colza Oil.	Date of such Substitution.	Expenses attendant upon such Substitution, viz.:				Average Amount of Annual Savings effected by such Substitution, viz.:		Name of Station where Mineral Oil is about to be substituted for Colza Oil.	Intended Date of such Substitution.
		Buildings.	Apparatus.	Other Payments.	Total.	Oil.	Stores.		

[As returned by the General Lighthouse Authorities to the Board of Trade.]

Board of Trade, 2 August 1875.

G. C. BENTINCK.

(*Mr. Grievé.*)

Ordered, by The House of Commons, *to be Printed*, 2 *August* 1875.

I.—TRINITY HOUSE.

RETURN respecting the Substitution of MINERAL OIL for COLZA OIL at the LIGHTHOUSES under the Jurisdiction of the TRINITY HOUSE, LONDON.

Name of Station where Mineral Oil has been substituted for Colza Oil.	Date of such Substitution.	Expenses attendant upon such Substitution.			Average Amount of Annual Savings effected by such Substitution, viz.:		Name of Station where Mineral Oil is about to be substituted for Colza Oil.	Intended Date of such Substitution.
		Buildings.	Apparatus.	Other Payments.	Oil.	Stores.		
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.		
Fern, Inner „ Outer (*a*)	June 1872 Aug. 1873	247 12 1	75 – –	– –	322 12 1	31 14 8 19 8 3	1 13 11 1 4 1	Hunstanton	Immediately.
Coquet, High	June 1875	230 – –	59 – 6	– –	289 – 6	—	—	St. Catherine's	Uncertain.
Whitby, North „ South	Oct. 1873	213 2 9	70 – –	– –	283 2 9	76 16 9 79 8 –	– 6 4 2 19 –	Caskets	ditto.
Flambro'	June 1872	120 – –	– –	– –	120 – –	60 17 8	5 12 5	Falmouth Harbour	Immediately.
Spurn, High „ Low	Jan. 1875	295 17 –	62 1 7	– –	357 18 7	—	—		
Winterton	Jan. „	271 1 9	23 6 10	– –	294 8 7	—	—	Avon	Uncertain.
Lowestoft, High (*a*) „ Low	Feb. 1874 Nov. „	334 – –	25 – –	– –	359 – –	2 9 10	*Loss*,— *2 7 4*	Usk	ditto.
Kessingland	Sept. 1873	– –	20 – –	– –	20 – –	7 4 –	*Loss*,— *1 2 6*	Flatholm	ditto.
Orford, High „ Low	Feb. 1875 Mar. „	430 – –	72 1 6	– –	502 1 6	—	—	South Bishop	ditto.
Dovercourt, High „ Low	July 1872	– –	100 – –	– –	100 – –	32 2 10 12 7 6	3 19 7 – 5 7	South Stack	Immediately.
Landguard	Oct. 1874	– –	20 – –	– –	20 – –	—	—	Nash	ditto.
Mucking	Sept. 1872	192 10 –	35 – –	– –	227 10 –	39 18 10	3 6 3		
North Foreland	Mar. 1875	165 – –	21 12 –	– –	186 12 –	—	—		
Dungeness, High „ Low	Oct. „	110 – –	– –	– –	110 – –	—	—		
Hurst, High „ Low	Sept. „	209 – –	30 – –	– –	239 – –	—	—		
Portland, High „ Low	Oct. 1873 Sept. „	– –	50 – –	– –	50 – –	92 18 6 87 5 6	– 4 7 1 7 –		
Start	Jan. 1874	172 13 4	– –	– –	172 13 4	76 4 9	*Loss*,— *1 7 10*		
Godrevy	Apr. 1875	392 5 4	36 3 –	– –	428 8 4	—	—		
Trevose (*b*)	Oct. 1873	35 – –	40 – –	– –	75 – –	176 16 –	– 10 11		
Hartland	July 1874	First lighted with Mineral Oil.			—	—	—		
Lundy	Dec. „	125 – –	50 – –	– –	175 – –	—	—		
Bideford	Nov. 1873	26 – –	50 – –	– –	76 – –	3 19 9	– 9 1		
Burnham	Nov. „	30 – –	50 – –	– –	80 – –	22 18 3	1 1 5		
Caldy	Mar. 1875	249 – –	26 8 –	– –	275 8 –	—	—		
Milford, High „ Low	Mar. 1874 Mar. „	420 – –	50 – –	– –	470 – –	56 2 8 72 14 10	3 13 4 2 12 8		
Great Castle Head	Dec. 1870	First lighted with Mineral Oil.			—	—	—		
Bardsey	Nov. 1874	198 – –	25 – –	– –	223 – –	—	—		
Holyhead Breakwater	Aug. 1873	First lighted with Mineral Oil.			—	—	—		
Skerries	Oct. 1874	312 – –	43 15 –	– –	355 15 –	—	—		
Menai	Mar. „	155 10 –	25 – –	– –	180 10 –	55 7 4	1 4 5		
St. Bees	Mar. 1875	249 11 3	19 8 –	– –	268 19 3	—	—		
Heligoland	June „	230 – –	– –	– –	230 – –	—	—		

REMARKS.

* In cases where the exhibition of Paraffin Lights has commenced during the present year, or towards the end of last year, no trustworthy statement of saving can be made.

(*a*) Altered at same time from Catoptric to Dioptric, at increased power.
(*b*) *Two* first-order lights.

N.B.—As the price of Rape Oil has very much diminished in the last two years, the average saving in oil is proportionately less upon the lights most recently converted.

Trinity House, London, E.C., 3 November 1875.

Robin Allen, Secretary.

II.—COMMISSIONERS OF NORTHERN LIGHTHOUSES.

RETURN of Lighthouses, under the Jurisdiction of the Commissioners of Northern Lighthouses, where Mineral Oil has been or is about to be substituted for Colza Oil, with the Dates of such Substitution or contemplated Substitution, and of any Expenses attendant on, and any Saving effected by, such Substitution.

Name of Station where Mineral Oil has been substituted for Colza Oil.	Date of such Substitution.	Expenses attendant upon such Substitution.				Average Amount of Annual Savings effected by such Substitution, viz.:		Name of Station where Mineral Oil is about to be substituted for Colza Oil.	Intended Date of such Substitution.
		Building.	Apparatus.	Other Payments.	Total.	Oil.	Stores.		
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.		
Inchkeith	26 Dec. 1874	- - -	42 14 3	8 6 2	51 - 5	- - -	2 10 1	Cantick Head	Summer of 1876.
Isle of May	9 Dec. „	- - -	70 2 3	59 4 4	129 6 7	- - -	1 18 1		
St. Abb's Head	21 Dec. „	- - -	57 19 3	66 - 4	123 19 7	- - -	1 14 2	Hoy Sound	
Bell Rock	19 Sept. „	- - -	108 18 -	34 18 1	143 16 1	42 11 2	3 1 5		
Montroseness	2 Dec. „	- - -	41 8 3	40 6 8	81 14 11	- - -	1 10 1	Auskerry	
Girdleness:									
High Light	20 Nov. „	- -	130 10 6	41 16 3	172 6 9	- - -	3 9 4	Start Point	
Low Light	21 Nov. „								
Buchanness	6 Sept. „	- - -	142 13 3	47 16 7	190 9 10	54 8 10	2 10 9	North Ronaldshay	
Kinnaird Head	1 Oct. „	- - -	57 12 6	10 16 6	68 9 -	69 - 4	1 14 2		
Covesea Skerries	9 Oct. „	- - -	57 12 6	18 1 9	75 14 3	70 8 11	1 14 2		
Chanonry Point	15 Oct. „	- - -	34 13 3	16 6 10	51 - 1	7 - 2	1 7 3	Sumburghead	
Cromarty	20 Oct. „	- - -	50 9 9	23 1 5	73 11 2	16 11 9	1 10 9		
Tarbetness	29 Oct. „	- - -	118 11 3	39 16 7	158 7 10	58 13 1	2 7 3	Bressay Sound	
Nosshead	4 Nov. „	- - -	57 12 6	19 14 -	77 6 6	- - -	1 14 2		
Pentland Skerries:								North Unst	
High Light	15 Feb. 1871	- - -	238 14 1	8 18 7	247 12 8	154 9 9	3 8 4		
Low Light	12 July 1873							Whalsey Skerries	
Dunnet Head	10 Nov. 1874	- - -	58 10 9	6 10 8	65 1 5	- - -	1 14 2		
Holburn Head	16 Nov. „	- - -	30 14 -	23 17 -	54 11 -	- - -	1 7 3		
Cape Wrath	15 Aug. 1875	- - -	113 7 9	30 13 9	144 1 6	- - -	2 6 1		
Stourhead	8 Aug. „	- - -	120 13 6	77 19 9	198 13 3	- - -	2 7 3		
Butt of Lewis	23 July „	- - -	61 5 6	62 3 3	123 8 9	- - -	1 14 2		
Stornoway:									
Low Light	10 Aug. 1871	- - -	75 12 6	35 12 9	111 5 3	13 6 10	1 8 7		
High Light	10 Aug. 1874								
Island Glass	13 July 1875	- - -	60 7 3	7 4 9	67 12 -	- - -	1 14 2		
Ushenish	27 June „	- - -	74 13 9	61 16 6	136 10 3	- - -	1 12 2		
Monach:									
Low Light	14 June „	- - -	90 14 3	79 13 7	170 7 10	- - -	1 14 2		
High Light	16 June „								
Barrahead	10 June „	- - -	122 4 3	33 12 7	155 16 10	- - -	2 10 -		
Skerryvore	24 May „	- - -	64 18 6	19 16 11	84 15 5	- - -	3 - 5		
Rona	30 Aug. „	- - -	56 6 6	50 - 7	106 7 1	- - -	2 14 5		
Kyleakin	7 Sept. „	- - -	33 9 -	28 11 7	62 - 7	- - -	1 7 3		
Oronsay	13 Sept. „	- - -	30 14 3	28 11 7	59 5 10	- - -	1 7 3		
Ardnamurchan	20 Sept. „	- - -	62 3 9	5 6 3	67 10 -	- - -	1 14 2		
Sound of Mull	28 Sept. „	- - -	28 17 9	28 11 7	57 9 4	- - -	1 7 3		
Corran	12 Oct. „	- - -	29 16 -	28 18 1	58 14 1	- - -	1 7 3		
Lismore	7 Oct. „	- - -	103 9 6	25 14 1	129 3 7	- - -	2 3 9		
Fladda	21 July „	Entire expenditure not yet ascertained.				—	—		
Rhu Vaal	15 July „								
Macarthur's Head	25 June „	- - -	44 9 -	19 1 10	63 10 10	- - -	1 10 1		
Skervuile	9 July „	Entire expenditure not yet ascertained.				—	—		
Lochindaul	5 June „								
Rhins of Islay	13 June „	- - -	138 10 -	36 11 10	175 1 10	- - -	2 10 9		
Mull of Kintyre	22 Aug. 1872	- - -	106 - -	6 15 6	112 15 6	69 12 9	1 14 2		
Sanda	9 Aug. 1875	- - -	73 15 6	16 8 2	90 3 8	- - -	2 12 2		
Devaar	31 May „	- - -	30 3 3	22 7 1	52 10 4	- - -	1 7 5		
Pladda:									
High Light	20 Dec. 1870	- - -	213 5 5	39 5 10	252 11 3	77 10 11	3 13 1		
Low Light	22 Sept. 1873								
Loch Ryan	22 May 1875	- - -	33 5 -	10 11 -	43 16 -	- - -	1 7 3		
Corsewall	12 May „	- - -	70 5 -	47 11 9	117 16 9	- - -	1 16 9		
Port Patrick	18 May „	Entire expenditure not yet ascertained.				—	—		
Mull of Galloway	24 Aug. „	- - -	94 11 3	21 9 4	116 - 7	- - -	2 2 7		
Little Ross	30 Aug. „	- - -	58 10 9	20 10 4	79 1 1	- - -	1 14 2		
Point of Ayre	10 Sept. „	- - -	81 19 -	60 18 1	142 17 1	- - -	1 19 1		
Douglas Head	6 Sept. „	- - -	55 13 -	35 16 1	91 9 1	- - -	1 12 1		

REMARKS.

The expenditure on apparatus includes the necessary reserve stock of burners, so that no outlay on that head may be expected for several years.

In the cases of Pentland Skerries, Stornoway, Mull of Kintyre, and Pladda, the expenditure on apparatus also includes the fee paid to Captain Doty for perpetual use of his burners at these stations. At the other stations, instead of this one fee, a royalty has been and is to be paid to him on each burner required, or which may be required in future, so that the first cost at the former stations is larger in proportion, though the future outlay will be less.

The saving on oils is calculated, as regards Colza, on the average of three years' consumption and price, and at the price of 1 *s.* 5 *d.* per gallon on the year's consumption of paraffin, as ascertained from the returns from each station, except Kinnaird Head, Covesea, Chanonry, Cromarty, and Tarbetness, whence the last monthly returns had not, at the date hereof, been received. In these cases the amount consumed for the last month is an approximate one merely. It is believed, however, to be within a few gallons of the amount which will actually be consumed; and at the low price of the oil (paraffin) can involve only an insignificant difference in the amount of "savings."

Northern Lighthouse Office, Edinburgh,
29 October 1875.

J. M. Duncan, Secretary.
Geo. Stewart, Accountant.

III.—COMMISSIONERS OF IRISH LIGHTS.

Irish Lights Office,
Westmoreland-street, Dublin,
4 August 1875.

Sir,

In reply to your letter of the 24th ultimo, transmitting an Order from the House of Commons for a Return of the Lighthouses at which Mineral Oil is used, I am directed to state that the Commissioners of Irish Lights have not adopted mineral oil as an illuminant at any of their lighthouses or light vessels.

I have, &c.
(signed) *W. Lees*, Secretary.

The Assistant Secretary,
Harbour Department, Board of Trade.

RETURN of Lighthouses and Light Vessels under the Jurisdiction of the Three General Lighthouse Authorities where Mineral Oil has been or is about to be substituted for Colza Oil, with the Dates of such Substitution or contemplated Substitution; and of any Expenses attendant on, and any Saving effected by, such Substitution.

(*Mr. Grieve.*)

Ordered, by The House of Commons, *to be Printed,*
2 *August* 1875.

385. *Under* 1 *oz.*

MARINE ASSURANCE (FOREIGN COUNTRIES).

RETURN to an Order of the Honourable The House of Commons, dated 22 March 1875;—*for*,

COPY "of the LETTER from the Board of Trade to the Foreign Office, enclosing QUESTIONS concerning the LAW of FOREIGN COUNTRIES on the Subject of MARINE INSURANCE."

Board of Trade, March 1875. } T. H. FARRER.

Board of Trade to Foreign Office.

(M. 1805.)

Board of Trade, Whitehall Gardens,
2 February 1875.

Sir,

THE Royal Commission on Unseaworthy Ships, which devoted much time to the law of Marine Insurance, has recommended that an endeavour should be made in common with other nations to revise the law on the subject, and to frame a complete and uniform code.

As a preliminary step it seems desirable to ascertain what is the law of foreign nations on the several points in which there is doubt or difficulty, and for this purpose the Board propose, should Lord Derby concur, that the enclosed questions, which have been prepared at the Board of Trade with the aid of Mr. Cohen, Q.C., should be sent to Her Majesty's representatives in the several countries named in the margin, with instructions to procure full and accurate answers to them, either by consulting the Government of those countries, or by referring the questions to competent lawyers. In Holland the Board of Trade have obtained much information from M. Rahusen, of Amsterdam, and if it were thought right by her Majesty's Minister to consult that gentleman the Board of Trade feel satisfied that the information would be satisfactory.

See Enclosure.

France,
Germany,
Austria,
Russia,
Sweden and Norway,
Denmark,
Holland,
Belgium,
Italy,
United States.

I have, &c.
(signed) *T. H. Farrer.*

The Under Secretary of State,
Foreign Office.

QUESTIONS concerning the LAW of FOREIGN COUNTRIES on the Subject of MARINE INSURANCE.

1. Is it the principle of the law that contract of insurance is a contract of indemnity merely, and is not to be made a source of profit to the assured? If so, how is this principle carried into effect in the following cases?

2. If it is clearly proved that the assured knew at the time he was insuring his property or interest that he was considerably overinsuring it, what effect would this have on the insurance?

3. If no such knowledge as is referred to in the last question can be brought home to the assured, but if in fact the amount insured exceeds the actual loss, does the law prohibit the recovery of the excess?

4. In the case of a policy on a ship where no value is fixed by the policy, what is the value of the ship taken to be for the purpose of estimating the amount for which the underwriters are held, and how is it ascertained, *e.g.*: Is it her value at the port of

 departure,

departure, and if so, does it include outfit and provisions, and premiums of insurance, and is any deduction made for wear and tear? Or is it her value at the time of loss, or what would have been her value at the port of destination?

5. In the case of a policy on a ship where the value is fixed by agreement and valuation on the policy, can the insured in case of total loss, actual or constructive, recover from the insurer the amount fixed in the policy, although greater than the actual value of the ship at the time of the commencement of the voyage or at the time of the loss?

6. If not, what steps can the insurer take to open the policy and contest the question of value, where he has reason to believe that the insured value exceeds the actual value, and what amount can the insured recover?

7. If he has the right to open the question of value, are any and what conditions imposed to prevent him from doing so frivolously and vexatiously?

8. In case of partial loss by damage to ship, can the assured recover wages and expenses accruing during the time of stay in port for necessary repairs, are those wages and expenses considered in the light of general average, or in the light of particular average falling only on the ship?

9. Does the law allow the shipowner to insure freight or profits?

10. If so, does it allow him to fix the amount of such freight or profits by agreement and valuation in his policy?

11. Is he allowed to insure the gross freight, *i.e.*, the whole sum paid to or to be paid to him for the use of his ship, or only the net freight, *i.e.*, such proportion of that sum as would remain to him after paying the expenses of the voyage?

12. If gross freight is insured, and the ship is lost on her voyage, can the shipowner recover the gross freight or only the amount he has actually lost? In other words, can he recover the gross freight without first deducting the expenses, such as wages, port dues, &c., &c., subsequent to the loss which he would have had to pay if the voyage had been concluded, but which, in consequence of the loss, he has not had to pay?

13. If he cannot recover the gross freight, what are the steps by which the insured can resist payment, and in what manner is the amount which he is entitled to recover in respect of freight calculated? In other words, what are the deductions to be made from the gross freight in respect of the expenses above mentioned, and how are these expenses ascertained?

14. If freight is prepaid to the shipowners, and the ship is lost before the completion of the voyage, can the merchant recover the freight from the shipowner?

15. In the case of a policy on goods, how is their value estimated when they are not valued in the policy?

16. If valued beyond their real value at the port of shipment or at the port of destination, can the assured recover the excess?

17. If not, by what steps can the insurer resist payment?

18. Is there any implied undertaking on the part of the insured that the ship shall be seaworthy?

19. Does this undertaking apply to time policies as well as to voyage policies?

20. Is it an absolute warranty of seaworthiness, or is it only an undertaking that the shipowner and his agents and the master of the ship shall, to the best of their ability, do all they can to make and keep the ship seaworthy?

21. Is this undertaking fulfilled if the ship is seaworthy at the time of first leaving port after the commencement of the policy, or does it extend throughout the whole voyage or period covered by the policy?

22. Does the unseaworthiness of the ship discharge the underwriters from liability in those cases in which the loss was not in any way occasioned by the unseaworthiness?

23. In what manner does deviation from the usual course of the insured voyage affect the liability of the underwriter? Does such deviation discharge the underwriter from liability in all cases or only in those cases in which the deviation may be considered as having increased the risk insured?

24. What is the nature of the tribunal by which questions between insurer and insured are tried? Is it a judge and a jury, or is it simply a judge, or is it a judge or judges assisted by mercantile or nautical assessors? In short, what is the composition of the tribunal, and does it give satisfaction?

MARINE ASSURANCE (FOREIGN COUNTRIES).

COPY of the LETTER from the Board of Trade to the Foreign Office, enclosing QUESTIONS concerning the LAW of FOREIGN COUNTRIES on the Subject of MARINE INSURANCE.

(*Sir Charles Adderley.*)

Ordered, by The House of Commons, *to be Printed*,
22 *March* 1875.

MARINE ASSURANCE (FOREIGN COUNTRIES).

RETURN to Two Orders of the Honourable The House of Commons, dated 2 July and 9 August 1875;—*for*,

(ORDER, 2 July 1875.)

COPY "of REPLIES to QUESTIONS concerning the LAW of FOREIGN COUNTRIES on the subject of MARINE INSURANCE (in continuation of Parliamentary Paper, No. 114, of Session 1875)."

(ORDER, 9 August 1875.)

COPY "of any further REPLIES to QUESTIONS concerning the LAW of FOREIGN COUNTRIES on the subject of MARINE INSURANCE (in continuation of Parliamentary Paper, No. 304, of Session 1875)."

Board of Trade,
August 1875.

T. H. FARRER.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed,*
2 *July and* 9 *August* 1875.

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— No. 1. —

(M. 1805–75.)

QUESTIONS concerning the Law of Foreign Countries on the subject of Marine Insurance.

2 February 1875.

1. Is it the principle of the law that contract of insurance is a contract of indemnity merely, and is not to be made a source of profit to the assured? If so, how is this principle carried into effect in the following cases?

2. If it is clearly proved that the assured knew at the time he was insuring his property or interest that he was considerably over-insuring it, what effect would this have on the insurance?

3. If no such knowledge as is referred to in the last question can be brought home to the assured, but if in fact the amount insured exceeds the actual loss, does the law prohibit the recovery of the excess?

4. In the case of a policy on a ship where no value is fixed by the policy, what is the value of the ship taken to be for the purpose of estimating the amount for which the underwriters are held liable, and how is it ascertained, *e.g.*: Is it her value at the port of departure, and if so, does it include outfit and provisions, and premiums of insurance, and is any deduction made for wear and tear? Or is it her value at the time of loss, or what would have been her value at the port of destination?

5. In the case of a policy on a ship where the value is fixed by agreement and valuation on the policy, can the insured in case of total loss, actual or constructive, recover from the insurer the amount fixed in the policy, although greater than the actual value of the ship at the time of the commencement of the voyage or at the time of the loss?

6. If not, what steps can the insurer take to open the policy and contest the question of value, where he has reason to believe that the insured value exceeds the actual value, and what amount can the insured recover?

7. If he has the right to open the question of value, are any and what conditions imposed to prevent him from doing so frivolously and vexatiously?

8. In case of partial loss by damage to ship, can the assured recover wages and expenses accruing during the time of stay in port for necessary repairs? Are those wages and expenses considered in the light of *general* average, or in the light of particular average falling only on the ship?

9. Does the law allow the shipowner to insure freight or profits?

10. If so, does it allow him to fix the amount of such freight or profits by agreement and valuation in his policy?

11. Is he allowed to insure the gross freight, *i. e.*, the whole sum paid to or to be paid to him for the use of his ship, or only the net freight, *i. e.*, such proportion of that sum as would remain to him after paying the expenses of the voyage?

12. If gross freight is insured, and the ship is lost on her voyage, can the shipowner recover the gross freight or only the amount he has actually lost? In other words, can he recover the gross freight without first deducting the expenses, such as wages, port dues, &c., &c., subsequent to the loss which he would have had to pay if the voyage had been concluded, but which, in consequence of the loss, he has not had to pay?

13. If he cannot recover the gross freight, what are the steps by which the insurer can resist payment, and in what manner is the amount which the insured is entitled to recover in respect of freight calculated? In other words, what are the

deductions to be made from the gross freight in respect of the expenses above mentioned, and how are these expenses ascertained?

14. If freight is prepaid to the shipowner, and the ship is lost before the completion of the voyage, can the merchant recover the freight from the shipowner?

15. In the case of a policy on goods, how is their value estimated when they are not valued in the policy?

16. If valued beyond their real value at the port of shipment or at the port of destination, can the assured recover the excess?

17. If not, by what steps can the insurer resist payment?

18. Is there any implied undertaking on the part of the insured that the ship shall be seaworthy?

19. Does this undertaking apply to time policies as well as to voyage policies?

20. Is it an absolute warranty of seaworthiness, or is it only an undertaking that the shipowner and his agents and the master of the ship shall, to the best of their ability, do all they can to make and keep the ship seaworthy?

21. Is this undertaking fulfilled if the ship is seaworthy at the time of first leaving port after the commencement of the policy, or does it extend throughout the whole voyage or period covered by the policy?

22. Does the unseaworthiness of the ship discharge the underwriters from liability in those cases in which the loss was not in any way occasioned by the unseaworthiness?

23. In what manner does deviation from the usual course of the insured voyage affect the liability of the underwriter? Does such deviation discharge the underwriter from liability in all cases or only in those cases in which the deviation may be considered as having increased the risk insured?

24. What is the nature of the tribunal by which questions between insurer and insured are tried? Is it a judge and a jury, or is it simply a judge, or is it a judge or judges assisted by mercantile or nautical assessors? In short, what is the composition of the tribunal, and does it give satisfaction?

REPLIES to QUESTIONS concerning the LAW of FOREIGN COUNTRIES on the subject of MARINE ASSURANCE.

— No. 2. —

FRANCE.

(M. 4330.)

ANSWERS TO QUESTIONS.

1. *Oui.* Le principe de la loi est que le contrat d'assurance n'est qu'un contrat d'indemnité seulement, et bien que la loi ne le dise pas d'une façon absolue, l'ensemble de ces dispositions l'établir d'une manière évidente, notamment les articles 338, 339, et 347 du Code de Commerce.

C'est d'ailleurs un cas de jurisprudence unanimément admis par les cours et tribunaux.

Les articles cités sont ainsi conçus :

338. Tout effet dont le prix est stipulé dans le contrat en monnaie étrangère, est évaluée au prix que la monnaie stipulée vaut en monnaie de France, suivant le cours à l'époque de la signature de la police.

339. Si la valeur des marchandises n'est point fixée par le contrat, elle peut être justifiée par les factures ou par les livres ; à défaut l'estimation en est faite suivant le prix courant au temps et au lieu du chargement, y compris tous les droits payés et les frais faits jusqu'à bord.

347. Le contrat d'assurance est *nul* s'il a pour objet le fret des marchandises existant à bord du navire, le profit espéré des marchandises, les loyers des gens de mer, les sommes empruntées à la grosse, les profits maritimes des sommes prêtées à la grosse.

2. Cette question est résolue par les dispositions expresses de l'article 357 du Code de Commerce ; l'assurance est *nulle* à l'égard de l'assuré seulement.

L'article 357 est ainsi conçu :

357. Un contrat d'assurance ou de réassurance consenti pour une somme excédant la valeur des effets chargés, est nul à l'égard de l'assuré seulement, s'il est prouvé qu'il y a dol ou fraude de sa part.

3. Si la fraude n'est pas prouvée, les parties tombent sous l'application de l'article 358 du Code de Commerce, ainsi conçu :

" S'il n'y a ni dol ni fraude, le contrat est *valable* jusqu'à concurrence " de la valeur des effets chargés, d'après l'estimation qui en est faite ou convenue.

" En cas de pertes, les assureurs sont tenus d'y contribuer, chacun à pro- " portion des sommes par eux assurées.

" Ils ne reçoivent pas la prime de cet excédant de valeur, mais seulement l'indemnité de demi pour cent.

4. Dans le cas où la valeur n'est pas fixée par le contrat, cette valeur est déterminée par expert, en tenant compte des causes de dépréciation, mais *en rapport avec la valeur au moment du départ.*

5. Toute la valeur convenue du navire est invariable pendant la durée du risque.

En cas de perte totale, l'assureur doit toujours la totalité de la somme assurée. Il ne peut l'éviter que dans le cas d'estimation *frauduleuse* quelle que soit la différence entre la valeur estimée et la valeur au port de départ.

La loi française ne fait aucune distinction entre les conséquences résultant de l'innaviguabilité relative appelée par les Anglais " *construction total loss ;*" toutes donnent ouverture au délaissement, et tombent à la charge des assureurs.

France.

6. La contestation d'une valeur agréée pour un navire est chose *tres-difficile*, à moins que l'exagération ne soit *excessive*.

En cas de réduction, s'il n'y a pas fraude, l'assuré aura à recevoir la valeur déterminée par expertise. S'il y a fraude, le contrat est *nul*.

7. Les conditions du contrat sont la loi des parties; c'est la seule à suivre, à moins qu'elles ne soient contraires à la loi du pays.

Les conditions du contrat ne pouvant être attaquées que pour cause de dol ou de fraude, si l'assureur élève des contestations vexatoires et futiles, il s'expose à être condamné à des dommages au profit de l'assuré. C'est une question d'appréciation pour les juges.

8. Dans tous les cas d'avaries, les frais et dépenses dans un port de relâche, suivent le classement des avaries qui ont occasionné la relâche.

Si la relâche a lieu pour le salut commun, les frais d'entrée et sortie du port de déchargement, etc., sont avaries *communes* en France.

Si le navire répare des avaries particulières, les frais de réparations et accessoires sont avaries *particulières* au navire, qui a à payer en outre sa contribution aux avaries grosses et les gages et vivres pendant la réparation.

S'il répare des avaries communes, tous les frais y compris les gages et vivres, sont avaries grosses.

9. *Non.* Les assureurs à Paris néanmoins, assurent généralement par *police d'honneur*, 60 pour cent. *du fret* que fait le navire.

Ils défendent aux armateurs de faire assurer des *bénéfices*, mais on trouve encore des assureurs qui assurent des bénéfices sur marchandises, *par police d'honneur*.

Quant aux assurances sur bénéfices du navire ou sur les 40 pour cent du fret non-assurables, suivant la police de Paris, elles profitent, en cas de perte, aux assureurs sur corps.

10. La loi, nous l'avons dit, ne reconnait pas l'assurance sur fret, conséquemment elle ne fixe aucune condition.

Mais il y a des *polices d'honneur* pour le fret.

Par police d'honneur on a fait longtemps toutes les conditions possibles, et ce n'est qu'en raison des abus qui se sont produits, que la police actuelle a limité la valeur assurable sur fret à 60 pour cent. (du fret effectif du voyage entrepris).

11. La réponse à l'article 9, répond à la présente question.

Non. *La loi* ne permet d'assurer, ni fret ni bénéfice espéré, soit en totalité soit en partie.

L'usage permet seul d'assurer par police d'honneur 60 pour cent du fret brut, considérés comme le produit net du fret.

12. Le propriétaire a le droit de recevoir l'entier montant du fret qu'il lui est permis de faire assurer, sans aucune réduction. (Soit 60 pour cent.)

C'est ici le cas de faire observer que l'assuré n'a pas, comme en Angleterre, la charge de payer les gages dûs à l'équipage jusqu'au jour du sinistre.

En France, ces gages sont payés uniquement sur le produit du sauvetage du corps et du fret, et tombent par suite à la charge de l'assureur; c'est là le motif qui a fait limiter à 60 pour cent. du fret brut, la portion qui lui est permis de faire assurer.

13. Il n'y a rien à répondre, l'assuré recevant toujours la portion du fret qu'il est permit de faire assurer. (60 pour cent.)

14. En cas de perte du navire, le fret payé d'avance *est restituable*, à moins de convention contraire (art. 302 Code de Commerce) ainsi conçu:

"Il n'est dû aucun fret pour les marchandises perdues par naufrage ou "échouement, pillées par des pirates, ou prises par les ennemis."

15. La valeur est fixée d'après les factures; à défaut, par le cours de la marchandise au port d'embarquement, avec les frais d'embarquement habituels et la prime d'assurance, le tout augmenté de 10 pour cent de bénéfice qu'il est permis habituellement de faire assurer.

En cas de difficultés, cette valeur est habituellement fixée par arbitres.

16. La valeur convenue fixe *en droit* la somme à recouvrer par l'assuré, hors les cas de dol ou de fraude.

La

France.

La police actuellement en usage à Paris, limite nonobstant toute estimation convenue, la valeur assurée au prix d'achat, plus les frais jusqu'à bord, la prime d'assurance et 10 pour cent de bénéfice espéré.

Elle donne à l'assureur le droit de réduire dans tous les cas le capital en risque, à la limite ci-dessus posée, mais à la charge par l'assureur de faire la preuve de la surévaluation.

17. L'assureur peut s'opposer au paiement en le refusant et en soumettant la question de valeur, aux tribunaux ou à des arbitres.

18. L'article 297 du Code de Commerce porte :

" Le capitaine perd son fret, et répond des dommages-intérêts de l'affré-
" teur, si celui-ci prouve que, lorsque le navire a fait voile il était hors d'état
" de naviguer.

" La preuve est admissible nonobstant et contre les certificats de visite au
" départ."

Donc, le chargeur ne répond en aucune manière de l'état du navire.

Le navire français est toujours muni avant le départ, d'un certificat de visite par les autorités maritimes du port. Ce certificat justifie, jusqu'à preuve contraire qu'il est en bon état de naviguabilité.

La police française couvre dans tous les cas le chargeur contre la baratterie de patron.

19. Les navires français au long cours, ne peuvent être expédiés qu'après avoir été visités et reconnus en bon état de navigation ; ceux faisant le cabotage sont visités tous les ans. Ces certificats font foi en justice jusqu'à preuve contraire.

La loi ne fait aucune distinction sur ce point entre les polices *à terme* ou au *voyage* ; aucun navire ne pouvant quitter le port sans être muni d'un certificat de visite.

20. Nous l'avons déjà dit, le certificat de visite justifie du bon état de naviguation jusqu'à preuve contraire, mais si cette preuve contraire venait à être faite, le capitaine perdrait son fret et serait tenu de dommages-intérêts envers l'affréteur (article 297 du Code de Commerce ci-dessus).

Les armateurs et capitaines sont tenus de maintenir, autant que possible, le navire en bon état de navigation.

21. Le certificat de visite couvre le navire pour toute la durée du voyage entrepris, sauf les accidents de la navigation.

Les avaries constatées détruisent les effets du certificat de visite et obligent le capitaine à faire réparer les avaries dans le premier port où il aborde. Le capitaine ne peut reprendre la mer qu'après que les experts ont constaté que les réparations ordonnées ont été exécutées et que le navire est en état de continuer son voyage.

L'engagement s'étend donc sur tout le voyage ou le temps couvert par l'assurance.

22. L'innaviguabilité constatée, détruit l'effet du certificat de visite *et libère* les assureurs de toute responsibilité, mais l'absence du certificat de visite n'est qu'une présomption, et les assureurs n'en sont pas moins tenue de payer une perte survenue dans des conditions tout à fait indépendantes de l'état du navire.

23. Le changement de voyage ou de route pour se rendre à un autre point que celui de destination, *vicie* l'assurance, même dans le cas où le navire serait encore sur la ligne du voyage assuré, et ce, dès l'instance où le changement de voyage a été arrêté.

Le fait par le capitaine d'avoir choisi une route différente de celle usuelle ne préjudicie pas à l'assurance, tant que la destination reste celle du voyage assuré ; cela peut cependant engager la responsibilité du capitaine, mais si le changement de route à pour but de se rendre dans un port hors de la ligne du voyage assuré, il *détruit* l'assurance.

24. En France, toutes les questions commerciales sont du ressort des tribunaux de commerce, qui jugent en *dernier ressort* toutes les affaires d'une importance de 1,500 francs et au-dessous. Les autres peuvent donner lieu à appel, qui se poursuit devant la cour d'appel, du ressort territorial. Très souvent les parties s'en rapportent à des arbitres.

En général, lorsqu'il y a compte à faire, le compte est établi par un *Dispacheur*,

France.

et l'on ne va devant les tribunaux que lorsqu'on n'a pas pu s'entendre sur son travail.

Les tribunaux de commerce sont des cours *spéciales* aux affaires industrielles et commerciale. Les juges sont des commercants élus par les notables négociants de la localité.

En France, il n'existe pas de jury en matière civile. Les tribunaux de commerce fonctionnent à la satisfaction générale.

Paris, 16 Mars 1875.

— No. 3. —

Austria.

AUSTRIA.

(M. 4329.)

PREPARATORY REMARKS to the following ANSWERS to QUESTIONS on MARINE INSURANCE.

BEFORE answering the questions handed to me by the British Embassy concerning the laws of Austria on Marine Insurance, I think it necessary to make a few preliminary remarks. There is no special law in Austria treating on insurances, or marine insurances particularly. Some years ago our Minister of Justice elaborated a project of law to meet this deficiency, and submitted it to the various corporations interested in the question for their opinion. These opinions were so unfavourable that the matter entirely dropped.

According to the usual logical arrangement of commercial codes, our commercial code ought to contain provisions for affairs of the marine. The Commercial Code of Germany, which, as it is well known, originated from a combined and common action of all Germany and Austria, contains really in its fifth part the law on marine affairs. But although all other portions of this code had been enforced as law in Austria, this part, No. 5, has not yet been so declared. To decide upon marine insurance matters, it is therefore necessary to revert to older laws, especially to the General Civil Code, which contains some valuable principles, which hold good with all insurances, and to the Code Napoleon, which in its commercial code contains regulations for marine insurances, and has been adopted in an Italian translation for the incorporated Italian provinces. Although the political changes had restricted the operations of this code, there remains an important part for its activity in Trieste, and the smaller ports of Istra.

I will finally remark that this apparent deficiency in our legislative enactments is not of that importance which might at first be imagined. All insurance affairs are the subjects of special contracts, and the conditions of these contracts are fully set forth in the policies. The latter, therefore, are of themselves the natural and sufficient basis for events of adjudication. It must not be supposed, however, that policies issued in Austria, or by our companies trading either at home or abroad, contain any peculiar provisions. Insurance matters are treated generally in conformity with the usages and customs of certain places, and as Trieste is not a specially pre-eminent point of the world, the affairs there concluded follow rather the principles adopted at more important places.

ANSWERS TO QUESTIONS.

1. Yes.

2. The insurance, as far as the insured is concerned, is null and void, provided that it can be clearly proved that there was fraud on his part.

3. The law admits only the recovery of the actual loss, the figure of which is to be arrived at either by valuation or agreement.

4. Our legislation does not explicitly establish any rule answering in regard to ships. But there is a rule given for an analogous case in regard to goods, and there does not appear any reason why this rule should not be applied to ships. It runs; "If the value of the goods has not been fixed by the insurance contract,

contract, it can be justified by means of invoices or books, in default of which the valuation is assessed according to the current price of the time and place of loading, including all the dues paid, and all the disbursements up to the placing on board."

5. The law does not lay down any clear regulation in regard to such a case, but according to the general rule previously referred to, the insured could not claim the excess of the real value at the time of the commencement of the voyage.

6. The insured has, in order to open the question, simply to refuse payment of the policy. The amount which the insured can recover is evidently that of the value he can prove.

7. No such conditions as are supposed in this question exist.

8. Such expenses are to be considered in the light of general average, and can be recovered as such.

9. The insurance of the freight or profits is not permitted by law. Still all our insurance companies admit it, and have in their policies special provisions for it.

10. *See* previous answer.

11. For the law, &c., *see* Answer No. 9; for the practice, policies are decisive.

12. *See* answer to previous question.

13. This entirely depends upon the policy.

14. Yes.

15. *See* Answer No. 4, where the necessary explanation is fully given.

16. No.

17. He has simply to refuse it.

18. Yes.

19. Yes.

20. All sea-going vessels being under government supervision, this amounts to an absolute warranty.

21. The undertaking is fulfilled if the ship is seaworthy at the time of first leaving port.

22. No.

23. Deviation from the usual course does in general affect the liability of the underwriters. This circumstance does not discharge in cases of a "force majeure."

24. Questions between insurers and insured are tried before the commercial tribunal, which consists of learned judges, assisted by mercantile and nautical assessors. The judgment is always given after deliberation, the majority of judges deciding, should there be any difference of opinions. There is no jury. This course gives entire satisfaction.

Vienna, 10 March 1875. (signed) *Dr. Winiwarter.*

Sweden and Norway.

SWEDEN AND NORWAY.

— No. 4. —

SWEDEN.

(M. 7416.)

(Translation.)

PROVISIONS of the SWEDISH MARITIME LAW on matters relating to MARINE INSURANCE, comprised in "Questions concerning the Law of Foreign Countries on the subject of Marine Insurance."

1. THE provisions of Swedish Maritime Law relative to Insurance agreements are based on the principle—universally adopted in the whole system of insurance —that in virtue of such agreement the assured is entitled to compensation for the full value of the insured property and no more; and that the insurance is not to be a source of profit to the assured.—(*Swed. Mar. Law* ("*Sjolagen*") *23rd Feb.* 1864, *sections* 186 *and* 191.)

2. In conformity with the Maritime Law of Germany—the provisions of which, in respect of insurance, form the basis for the provisions of Swedish Maritime Law on the subject—it is provided, by Section 191 of the Swedish Maritime Law, that if any person insure property to a higher amount than its full value, the insurance for the amount exceeding such value is invalid. Nevertheless, even if the assured wittingly insure property for more than its full value, the insurance, so far as the full value of the property so insured is concerned, remains legally valid, provided, according to the legal principles applying to agreements in general, the whole insurance transaction be not regarded as invalid, as, for instance, in the case of fraudulent intention.

3. If the assured unwittingly insure property above its real value, such insurance is only valid for the amount corresponding to the full value of the property, and the excess of insurance is invalid.

4. If, at the time of insuring a vessel, its value be not agreed upon, the insurance value of such vessel is based on the value of the vessel at the time when the risk of the assurer commences, *i.e.*, the value of the vessel at her port of departure, provided the insurance commence there. By express agreement the cost of equipment, the wages of the crew, and the costs of insurance may be added to such value of the vessel, provided these costs be not previously covered by insurance of the gross freight. If an insured vessel become a total loss the assurer is unconditionally bound to compensate for the insured value of the vessel on the above-named basis, without any deduction for wear and tear. If, on the contrary, the insured vessel only suffer partial loss, the Maritime Law provides for a deduction from the compensation, of the difference in value which, in certain cases specified by the Maritime Law, is considered to exist between new and old property; and, accordingly, when in these cases a vessel sustains partial loss, a deduction for wear and tear is made.—(*Sections* 197, 198, 231, *and* 152 *Mar. Law.*)

5. If the value of an insured vessel be determined by agreement between the assured and the assurer, the assurer is, nevertheless, entitled to a reduction in the value thus agreed upon, provided he can show that, at the time of entering upon such agreement, the estimated value considerably exceeded the actual value. If the assurer can produce evidence to this effect, the assured is only entitled to receive compensation corresponding to the full value of the vessel at the time the risk commenced.—(*Section* 196 *Mar. Law.*)

6. If, in the case cited in the previous answer (No. 5), the assurer and the assured should disagree as to the amount of compensation, the assurer may submit the question at issue to the examination and decision of the appointed Average

Sweden and Norway.

Average Stater, whose duty it is to examine the case and to decide the amount to be paid in compensation to the assured by the assurer. If the assurer or the assured demur to the decision of the Average Stater, they may appeal against it, in the manner hereinafter described in Answer No. 24.—(*Section* 268 *Mar. Law.*)

7. There is no other provision in the Swedish Maritime Law tending to prevent the assurer from submitting the question of the value of insured property to legal decision without sufficient cause, than the following: viz., That the assurer has to pay legal interest on the amount of compensation from the day on which he is bound by law to pay such compensation; and, also, That any assurer who brings the decision of the Average Stater under the consideration of the special jury which (as stated in Answer 24) has to hear and decide upon appeals against average statements, may be condemned to pay the entire fees accruing to the jury for their services.

8. In cases of partial loss by the damage of the vessel, the assured is entitled to compensation for the wages of the crew, and for other expenses that may arise during the detention of the vessel in port for requisite repairs.—(*Sections* 230 *and* 231 *Mar. Law.*)

If a vessel put into port in the course of her voyage to avoid peril both to the vessel and the cargo, the wages of the crew and other expenses arising during the detention of the vessel for repairs, are placed to account of general average. —(*Section* 143 *Mar. Law.*)

9. By Swedish Maritime Law the owner of a vessel is entitled to insure freight.—(*Section* 187 *Mar. Law.*)

10. The assurer and the assured may decide by agreement the value of the freight or profit insured. Nevertheless the assurer is entitled to deduction in the value agreed upon, if he can prove that it considerably exceed the actual value of the freight.

11. The gross freight may be insured, provided the costs of equipment and insurance and the wages of the crew be not separately insured. If they be so insured, the net freight only may be insured.—(*Section* 199 *Mar. Law.*)

12. If the gross freight be insured, and the vessel be lost on her voyage, the assured receives compensation for the insured gross freight, with the deduction only of such proportion of wages, port charges, and similar costs, as remain unpaid, in consequence of the casualty. This is expressly enacted, as regards costs for equipment and wages, by Section 202 of the Maritime Law, and with regard to port charges and similar expenses, the assurer's right to such deduction follows from the general principle upon which the system of insurance is founded, viz., that the assured shall only be indemnified for the actual value lost through the casualty.—(*Section* 202 *Mar. Law.*)

13. If the assurer consider himself entitled to the deduction from the indemnity to be paid by him on insured gross freight, described in the foregoing answer, he may submit the matter to the examination and decision of the Average Stater. The value of the gross freight is determined by charter-party or bill of lading; or, if the freight be not stipulated by charter-party or bill of lading, the said value is determined by the current freight at the port of loading, for the voyage in question. Deductions from the gross freight are determined by the Average Stater in conformity with the documents submitted to him in elucidation of the case, and in forming his decision he has to observe the same rules that apply to insurance and average cases in general.

14. If the freight on goods be paid in advance, and the vessel be lost on her voyage, so that the goods on which freight has thus been prepaid are totally lost, the owner of such goods is entitled to reimbursement for the freight.—(*Section* 111 *Mar. Law.*)

15. If the assurer and the assured do not expressly stipulate in the policy the value of the goods insured, the insurance value is determined by the value of the goods at the port of shipment, as shown by invoices or exchange quotations, or, in the absence of these, by other suitable means, with the addition of Custom duty and all costs attaching to the purchase, insurance, and shipment of the goods, *i. e.*, all costs at the port of shipment. By express agreement between

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between the assurer and the assured, the said value may include freight, expenses during the voyage, Custom duty, and other costs at the port of destination.—(*Sections* 197 *and* 201 *Mar. Law.*)

16 and 17. If the insurance value of the freight be determined by agreement between the assured and the assurer, the latter may, notwithstanding, obtain a reduction in the value so determined, provided he can show that the said value, either at the port of shipment or at the port of destination, considerably exceeds the actual value. If the assurer can prove this, the assured is not entitled to receive compensation for any excess in the amount of the value agreed upon, above that of the actual value.

If the assurer claim such reduction, he may refer the matter to the examination and decision of the Average Stater, who has to treat the case in the manner provided for the cases previously cited in Answers 6 and 13.—(*Sections* 196 *and* 268 *Mar. Law.*)

18 and 19. By Section 224 of the Maritime Law it is provided that, in effecting the insurance of a vessel or freight, the assurer is not liable for any damage that may arise from the unseaworthiness or faulty equipment and manning of the vessel at the time the risk commenced. Consequently, in insuring a vessel or freight, the Swedish Law of Insurance tacitly assumes the seaworthiness of the vessel, and makes such seaworthiness an absolute condition for the validity of the insurance. It is sufficient, however, that the vessel be seaworthy at the time the risk of the assurer commence. The requirements of Swedish Maritime Law relative to the seaworthiness of vessels at the time of insurance of the vessel or freight, applies equally to insurance for a stated period and to insurance for the voyage.

20 and 21. It is an absolute condition in effecting the insurance of a vessel or freight that the vessel be seaworthy; but, as previously stated, this condition is fulfilled if the vessel be seaworthy at the time the risk commence, that is to say, in the case of insurance for the voyage, at the time that the master begins to take in cargo or ballast.—(*Sections* 224 *and* 235 *Mar. Law.*)

22. Pursuant to the provisions of Section 224, Clause 1, of the Maritime Law, the Swedish Law of Insurance does not on account of the unseaworthiness of a vessel release the assurer from compensating for damage that is in no way occasioned by such unseaworthiness.

23. If, on an insured voyage, a vessel deviate from the usual course, without the action or consent of the assured, the assurer is not thereby released from his liability. If, however, such deviation occur by and with the action and consent of the assured, then the assurer is thereby released from his liability, unless the alteration in the course in no manner affect the subsequent casualty, or the deviation be necessitated by peril for which the assurer is liable, in both which cases the assurer still remains liable, notwithstanding such deviation.—(*Section* 219 *Mar. Law.*)

24. If the assurer and the assured do not agree concerning the amount of compensation to be paid in connection with an average, it is the duty of the Average Stater to examine and decide the question. If the assurer or the assured demur to the award and decision made in the average statement with respect to the amount of compensation, the demurring party may submit the question to the decision of a special jury, consisting of a president, versed in law, appointed by the court of the first instance at the town in which the average statement is issued, and four members, of which the assurer and the assured appoint two each respectively in the presence of the said court. There is no appeal against the decision of such jury.

If, however, the dispute between the assurer and the assured be not in respect of the amount of compensation, but the question be whether the amount insured shall be paid or not, maritime law provides that such dispute shall be decided by the court of the town to the jurisdiction of which the respondent belongs; or if he be domiciled in the country, by the court of the first instance at the nearest town to his abode. The common practice, however, is to refer questions of this character for examination and decision to the Average Stater, and, in the event of demur to the average statement issued, to submit the case for decision to the jury above described.

This

Sweden and Norway.

This system of deciding insurance disputes has prevailed in Sweden since the first (1st) day of January, in the year One thousand eight hundred and sixty-five (1865), and it appears to answer its purpose satisfactorily. It effects the decision of insurance questions in dispute, with requisite speed, by persons who as far as possible possess adequate knowledge on the subject of insurance.

Stockholm, this Seventh (7th) day of April, in the year One thousand eight hundred and seventy-five (1875).

(signed) *L. Annerstedt.*

(In Fidem.)

(signed) *George Ze T. P. George,*
Translator.

Stockholm, 26 April 1875.

— No. 5. —

NORWAY.

(M. 7416.)

(Translation.)

BEFORE answering the accompanying questions, it is essential to explain that the law on the subject of marine insurance is of little importance, as it consists merely of a few paragraphs in the Statute Book of 1687. Previous to the year 1837, when the first Norwegian Insurance Association was founded, all marine insurances were effected abroad. This association only insured vessels insured in accordance with certain Statutes which it had adopted, and which were based mainly upon the rules of insurance in force at Hamburg. The same system was followed in the case of several other companies for insuring vessels which were subsequently established, as well as by those companies founded for the insurance of freight, merchandise, &c., exactly in accordance with the Hamburg Statutes.

In 1871, however, a general scheme of Norwegian marine insurance was framed, which is recognised as valid by a majority of the Norwegian insurance companies. This scheme conforms in essentials to the new Hamburg Statutes of 1867.

The insurance of vessels is effected almost exclusively by associations conducted upon the mutual principle, whereas all other insurance is effected by general share companies which carry on the business of insurance as a branch of trade.

As it is obvious that information is not wanted from hence in regard to the rules in force at Hamburg, the general Norwegian marine insurance statistics, and the laws of the country generally, in so far as they bear upon this inquiry, have alone been considered in the following reply.

An English translation of the Statutes is annexed hereto. *See Enclosure.*

ANSWERS TO QUESTIONS.

1. This may unquestionably be considered as the leading principle, although, as will hereafter be shown, it is not always carried strictly into effect.

2. Such concealment would constitute penal fraud, and would vitiate the whole insurance. (*See* accompanying Statutes, Section 26.)

3. This point is provided for by Section 78 of the Statutes. The amount of insurance stipulated in the policy would not, in the event of recovery, be binding upon the insurer should he be able to show that the value was over-insured by 10 per cent.; but the amount insured is invariably binding where it has been fixed by the insurer himself, or is based upon an estimate to which he has agreed. As in the case of mutual association, vessels are always insured in one or other of the last-mentioned ways, the rule first spoken of, in so far as the vessel is concerned, is of but slight importance.

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4. Section 10 of the Statutes determines that in such case a vessel shall be deemed to be insured for its value at the time when the insurance was effected. Her outfit, provisions, &c., are not comprised in the insurance (*see* Statutes, Section 4). But as a matter of fact, it is not customary to insure vessels in this manner.

5. Answered under No. 3.

6 and 7. After what has been already said, answers to these questions are superfluous.

8. Expenses which are carried by a vessel being driven into port by stress of weather are recoverable by Norwegian Maritime Law by general average, in the event of the vessel being compelled to go into port on account of an injury of so serious a nature as to preclude her remaining at sea. Amongst such expenses are reckoned—

(a.) Pilotage, harbour dues, and other public charges to which the vessel and cargo are liable.

(b.) Expenses connected with the unloading, warehousing, and reloading of cargo, but not the cost of labour for shifting the cargo, or such like operations having for their object its preservation; neither the premium or insurance against fire when the cargo is placed in store.

(c.) The agent's commission on the cargo, provided it does not comprise superintendence of the measures necessary for the preservation of the cargo.

(d.) Board and wages of the master and crew for the time during which the vessel was necessarily delayed in order to repair the damage sustained.

The share of general average to which the insured article may be liable is payable by the underwriter in accordance with Section 63 of the Statutes; but in no case are such loss or expenses recoverable as having been incurred solely in avoiding disaster not comprised in the underwriter's risk.

With respect to board and wages, Section 64, Nos. 2 and 3 of the Statutes, may further be consulted on this point.

9. It is open to the shipowner to insure freight and outfit. Profits on goods which are his property may be insured in accordance with Section 10 *f.* of the Statutes.

10. According to Section 78 of the Statutes the valuation of freight is only deemed valid when the amount of the freight has not been agreed upon; otherwise the amount of freight is always to be determined by means of the charter-party and bills of lading.

11. He can insure the gross freight comprising primage, or any gratuity that may have been stipulated (*see* Statutes, Section 10). Should he likewise insure his outfit, the aggregate amount of insurance for freight and outfit must not exceed the amount of the gross freight, unless the vessel either has on board provisions for future voyages, or for some other reason the outfit is greater than is actually necessary on the voyage, and this is stated in the policy. With respect to the insurance of freight, it is almost always the gross freight which is insured.

12 and 13. In case the vessel should be lost he would recover the gross freight without any deduction for the subsequent expenses he would have to pay (*see* Statutes, Section 58), more especially as nothing be deducted for wages saved, or for expenses at the place of destination. If, on the other hand, any portion of the freight or outfit should be saved, the value thereof has to be deducted. (*See* Sections 58 and 59.)

In adopting the above-mentioned rules, it was not lost sight of that this method of insurance would occasionally give a profit to the insured; but it was considered on the other hand that he would frequently in such cases have to defray expenses which are not recoverable.

14. Yes; unless it should have been otherwise agreed.

15. When

Sweden and Norway.

15. When goods are not valued in the policy, it is assumed that they are insured for their value at the port of shipment (invoice value), including expenses until placed on board, provided such expenses are not payable by the vessel. On the other hand, neither freight nor expenses at the port of destination are therein included. (*See* Statutes, Section 10.)

16. The rule applicable in this respect has been mentioned under No. 3.

17. There are no particular steps to be taken; the insurer has only to provide the necessary proofs in order that they may, in the event of an action, be forthcoming.

18. Yes; this may be assumed in so far as insurances by a shipowner are concerned. For it is provided by Section 44 of the Statutes, "In general, compensation will be paid for every loss which the insured may suffer by a disaster to the insured object, whether caused by exceptionally bad weather, breach of sea, striking, collision, floating ice, fire, robbery, war or piracy, or by other similar accidents," from which it may be seen that damage arising from the vessel's defective condition is excluded.

In connection herewith, Section 45 states that in a case of insurance effected by a shipowner, no indemnity is recoverable for the consequences of the master's neglect to keep the vessel duly found and manned.

Again, Section 52 states: "In insuring a vessel, no compensation will be awarded for repair of damages arising from wear and tear, worms, defects and wants of old standing, or such weakness of the injured portion of the vessel or its fittings as would prevent them from being deemed seaworthy or in a proper state. Amongst the proofs of weakness will be reckoned that when at sea the vessel becomes leaky, without the leak being due to exceptionally bad weather."

And it is stipulated by Section 36 that on every insurance by the shipowner it shall be open to the underwriter at any time when practicable to demand a survey as to the vessel's seaworthiness. Should the shipowner decline to concede such survey, no indemnity is recoverable for subsequent losses, unless it can be proved that these were not occasioned by defects in the vessel.

And with reference to this matter, it may be observed that according to Norwegian Maritime Law the master is bound to see that his vessel is in a seaworthy condition, and he is responsible for any injury to the cargo in consequence of its not being so. The shipowner is subsidiarily answerable for the master's omission is this respect to the extent of the vessel's value.

19. Yes.

20. It may be presumed from the above-named dispositions that there is a warranty on the part of the shipowner. But it is true that the whole question of seaworthiness is a disputed one, and there are as yet no legal decisions in regard to it.

21. It results from the dispositions above cited that the vessel must be kept seaworthy the whole time for which the insurance has been effected.

22. No.

23. Paragraph 32 of the Statutes provides that if a vessel under voyage insurance deviates from its direct course to call at other ports than those mentioned in the policy, or in an order different from that stipulated, the consequence will be:

In case the deviation shall have taken place with the knowledge and consent of the insured, the risk ceases as soon as the deviation takes place, and does not revive.

If it has taken place without the insured's knowledge or consent, the insured will be liable to an increased premium. Although the Statutes assume that the vessel will sail straight (*see* Section 13), the direct course, "den lige cours," they contain no stipulation with respect to deviations consisting merely in the adoption by the vessel of a different route than the customary one between any two ports. Such deviation therefore, apart from any exceptional circumstances, and provided it was not with a collateral object, would hardly be considered of any consequence.

24. Questions relating to marine insurance are tried by the maritime courts,

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which consist of the usual judge of each place, and two persons conversant with maritime and nautical matters, who are appointed for that purpose by the chief magistrate (or, in certain cases, by the bailiff). The three members of the court have equal voices both with respect to questions of law and fact.

The maritime courts sit as courts of first instance, and an appeal from them can be carried to the supreme court, a right which is very extensively exercised.

The members of the supreme court are all jurists, but should anyone be dissatisfied with the decision of the maritime tribunals on a question requiring familiarity with nautical matters, he may have recourse to a jury of four men versed in nautical matters to be named by the bailiff. The verdict of this jury is not, however, in every instance considered as final, whilst the supreme court, as a rule, deems itself entitled to pronounce judgment with reference to the whole body of evidence adduced.

The organisation of the maritime tribunals here described was introduced in 1860, and any positive opinion as to its successful working can hardly as yet be said to have been formed.

(signed) *H. Groun.*

Christiania, 30 March 1875.

(Enclosure.)

EXTRACT of the STATUTES of the MUTUAL SHIP ASSURANCE ASSOCIATION in *Christiania* (agreed to at a General Meeting the 28th of February 1872); and the GENERAL NORWEGIAN MARINE ASSURANCE PLAN, published by the Committee of Management of the "Norske Veritas," October 1871.

EXTRACT of the STATUTES of the MUTUAL SHIP ASSURANCE ASSOCIATION in *Christiania.*

CHAPTER I.

The Association and its Directory.

1. The Association, which was established the 14th of November 1867, and bears the name of "*Skibsassuranceforeningen i Christiania,*" consists of shipowners residing in Norway.

The object of the association.

Its object is mutual assurance of those ships, and parts thereof, which are admitted into the Association, and this engagement rests upon the ships as well as upon the owners.

Directory.

2. The Directory of the Association consists of 12 members, who, in conjunction with five supplementary ones, are to be chosen at a General Meeting amongst the qualified members (Article 6).

The Directory chooses from amongst its own body four members, who, in conjunction with a Managing Director chosen by the Directory, forms the Committee of the Association.

Meetings of the Committee.

5. The Committee will assemble regularly once a week, or as often as the Chairman may consider necessary.

Management of the current business.

The Managing Director, after special instructions from the Directory, either alone or in conjunction with one or more of the rest of the Committee, has to manage the current business, including issuing of policies and calculating compensation for damage.

General meetings.

6. Before the expiration of February an ordinary meeting will be held every year.

CHAPTER II.

Admission of New Members, Assessment of Ships, and Withdrawal from the Association.

Classification of the "Norske Veritas" is the basis of assurance.

8. The Association is a member of the General Survey Company, the "Norske Veritas," whose classification, taxation, and assessment of bearing capacity is the basis of every assurance.

Admission.

9. New members and ships, or parts in ships, can at any time be admitted into the Association on the terms contained in these Statutes.

10. Every

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Admission.

10. Every proposal for the admission of a vessel into the Association must be in writing, and state the sum and part for which, and the day from which, the assurance is to bear date, and also be accompanied by the documents of the "Norske Veritas" survey and classification. At the request of the Committee the owner is likewise bound to furnish every information regarding the vessel he may be in possession of not contained in the before-named document of survey.

Interim classification.

For vessels that may not be present for re-survey when the period for taxation, class, or duration of bearing capacity is expired, the Committee will assess the value, class, and bearing capacity, and also the duration of the same.

The owner shall, without delay, inform the Committee, when the vessel arrives at a Norwegian port, where the re-survey may take place.

The premium for the time during which the vessel has thus been interim classified will be regulated by the class obtained in the re-survey.

Interim classification.

11. Ships not present, but which with certainty are known to be in safety, as well as ships present, but which at the time of proposal cannot be surveyed by the "Norske Veritas," may, in the interim, be admitted by the Committee for assurance, upon the terms set forth in the foregoing article, until the re-survey can be accomplished, the premium being also regulated in the same manner.

Clinker-built vessels and those under 30 "Kommercelæster," as well as ships in Class C, not to be admitted.

12. Clinker-built vessels, and those under 30 "Kommercelæster" (60 tons register), are not to be admitted into the Association; nor can vessels be admitted which, at the time they are proposed, stand in classes C 1 and C 2.

Should a vessel which has been admitted into the Association on interim classification, on survey of the "Norske Veritas," be reduced to class C 1 or C 2, it will be considered as withdrawn.

With regard to return of premium, and participation in the year's account, *see* Article 13, last clause.

The Committee may object to admit.

13. The Committee may, at any time they consider advantageous for the Association, refuse to admit proposed vessels or parts in such.

Expulsion by the Committee.

It can also expel admitted ships and parts of ships when they are in port, or from the time they come into port. In such cases return of premium is granted from the time the withdrawal from the Association's risk takes place; whilst the ship (inasmuch as no other arrangement is made by the Committee) participates in the surplus and contribution, though only with such fractional part of its guarantee sum as the assurance time constitutes of the whole year.

Interim or definitive withdrawal of risk by members.

14. It shall at any time be free for the members to repeal the risk upon either their vessels or parts in such, or to withdraw them from the Association, but both the vessels and members will still remain liable for damage that may have occurred during the past year, as well as what may occur in the course of the year next following, should the repeal or withdrawal not be sent in before the 30th of November of the foregoing year.

Sales.

15. Should a sale take place, either of a ship or a part therein (such being assured in the Association), information thereof must be sent to the Committee, by the vendor, within 14 days; such ship or part nevertheless participating in the current year, whether the purchaser enter as member or not.

Chapter III.

Assurance and Compensation.

General Norwegian Marine Assurance plan.

16. The General Norwegian Marine Assurance Plan, published by the Committee of Management of the "Norske Veritas," is to be in force for the Association, in all cases where there is no special provision made in these laws or in the policy.

Maximum on one keel.

17. The Association will not undertake the risk upon any ship, or part of a ship, for a larger sum than 8,000 specie dollars on their own risk.

Limitation in the use of this maximum is left to the Committee to decide. Moreover, assurance is undertaken for so large an amount as the Committee can cover by re-assurance.

Part assurance.

18. Should a shipowner desire to assure a smaller sum than the value placed upon his ship, this may be effected; but the Association will then only assure so large a part thereof as is in adequate proportion to the value placed upon the whole vessel. Should the rest of the amount be assured elsewhere, the owner is bound (within eight days after knowledge of the fact) to inform the Committee of the place where, and the amount for which, the assurance has been effected.

Policy.

19. When a policy is issued, the assurance continues uninterruptedly until the vessel has been withdrawn from the Association by the Committee or owners, or until the assurance be temporarily, and with previous due notice, repealed for an expressly defined period, or a definitely fixed stay in a port.

Should a vessel on re-survey obtain a lower assessment and become a loss, before a

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fresh policy is issued, the last valuation will be the basis for calculation of compensation.

Transfer of policy.

The policy may be transferred or pledged by the owner, but the Association (without regard hereto, and notwithstanding Articles 42 and 84 on the plan) has always the right reserved to liquidate its claim in the amount of compensation; this reservation is inserted in the words of the policy.

Capture, and war molestation.

20. The Association is not bound by the last clause in Article 37 of the plan.

Assurance against hostile capture and war molestation, in each case, will only be valid provided:

(a.) That on the departure of the vessel, it is publicly known that the United Kingdom is not involved in war.

(b.) That the country where the vessel takes in its cargo, at the time of its departure, is not at war with that country to which the cargo is destined. It is incumbent upon the shipowner, by an attest from the Consul of the United Kingdom or some other competent authority, to prove that at the last place of the vessel's departure, war was not known to have broken out.

Should the vessel, at the request of the Association, remain lying a longer period than three months, the assured will be entitled to a compensation for the delay at 5 per cent. per annum of the amount of assurance, from the commencement of the fourth month.

Self-assurance of vessels in Class C.

21. The vessels assured in the Association, which are reduced to Classes C 1 and C 2, shall only be assured, at the highest, for three-quarters of their estimated value, and conditionally, that no excess of the three-quarters shall be assured elsewhere. By acting contrary to this, the assurance effected in the Association will become invalid in case of accident, without the premium of assurance being returned.

Limitation of assurance.

22. The Association does not assure vessels—

1. Which placed in Class B 2, or lower, are bound for America, the West Coast of Africa, or the islands situated outside.

2. Which placed in Class B 1, or lower, are bound round Cape Horn or the Cape of Good Hope.

3. Which sail on the Jutland coast from Skagen to Fano, with the exception of Thyboron canal, Hjerting, and Fano.

Baltic trade.

4. Which are bound for ports in the Bay of Bothnia, to the north of Umea and pass Elsinore after the 30th of September or before the 16th of April, or bound for ports in the Bay of Bothnia to the south of Umea (this place inclusive), or to the Finland or Riga Bay and pass Elsinore after the 15th of October, or before the 1st of April, or which pass Lindesnæs or depart from any Norwegian or Swedish port, bound to the Cattegat (Gothenburgh excepted) after the 15th of December or before the 1st of March, or

White Sea trade.

5. Which bound to the White Sea, Greenland or Iceland, depart from a port, more northerly than Ouessant in France, after the 10th of August or before the 1st of May, or pass Gibraltar, or depart from a port outside the same, or south for Ouessant after the 1st of August or before the 20th of April.

6. Which depart:

Trade to Canada, &c.

(A.) To any port in St. Lawrence above Cape Gaspé:

(a.) When they leave any place in Europe outside the Straits of Gibraltar, before the 20th of March, or after the 25th of August.

(b.) When they pass out of the Straits of Gibraltar before the 10th of March or after the 20th of August.

(c.) When going from any place in North America situated north of 25° northern latitude (places within the same latitude in the Gulf of Mexico inclusive) after the 10th of September, or before the 20th of April.

(d.) When they depart from places in the West Indies and South America, between 25° north latitude and 5° south latitude, after the 30th of August, or before the 10th of April.

(e.) When they depart from places in South America and also on the West Coast of Africa to the south of 5° south latitude, after the 20th of July, or before the 1st of March.

(B.) To other places in British North America, to the south of Cape Gaspé with the exception of Halifax and St. John's, N.B., also with the exception of places in British North America, situated to the south of a straight line between Halifax and St. John's, N.B.

When

When they leave from the above-named places of departure, as mentioned in letters (a.) to (e.): before the respective spring dates or after dates reckoned 5 days later than the above-mentioned autumn dates. Sweden and Norway.

In particular cases, such as retarded voyage and by re-assurance from other associations, the committee (notwithstanding the above-mentioned periods of time) may grant assurance at an increased premium.

23. On ships that go out in the whale or seal fishery, the Association will only assure for safe arrival, or with other limitations in the general assurance, according to the decision of the Committee. Whale and seal fishing.

24. Besides the foregoing limitations in assurance, the Committee (by giving notice before the departure of a vessel) may also decline to assure to other places, and in other waters. Further limitation.

25. Should any shipowner (after having received a written request from the Committee) omit to make the required repairs before the vessel goes on a voyage, such ship will be considered as out of the Association and unassured. Should he omit to supply the vessel with the enjoined deficient inventory, within the fixed respite, and the vessel be lost or damaged, a reduction will be made in the amount of compensation of not exceeding 50 per cent., as the Committee may decide. Omission of repairs. Deficient inventory.

26. The Committee has the right of demanding, as a condition for the continuance of the assurance, that the members, whenever required, shall pay the premiums that are due, or give for the same such security as the Committee may deem satisfactory. Unpaid premiums that are due.

27.— Condemnation.

(a.) That the Association may consider the condemnation, mentioned in Article 47 of the plan, valid, it will be required, provided there was opportunity, that the Committee shall have had timely information of the estimate of repairs which has determined the amount of expense for putting the vessel into justifiable and seaworthy order (according to Article 50 of the plan). When the Committee considers it in accordance with equity, and provided the damage (treated of in Article 47 of the plan's first clause) exceed half of the value at which the ship was assessed by the Association, it has, however, the right to treat the loss as total.

(b.) Besides what the plan (particularly Articles 28, 45, and 46 appoint), the Association is also irresponsible, where an accident has been caused by the vessel going to places or into waters to which the vessel, according to the Committee's published rules for the members, is not assured, or to other places which, in general, are not traded upon by vessels of such deep draught. Forbidden waters.

(c.) Nor does the Association allow any compensation for caulking the bottom of those vessels which are not furnished with wood or metal sheathing, unless the owners prove that the bottom has been completely caulked in the course of the last five years. Caulking which is not compensated.

(d.) The plan's Article 64 is not in force for the Association. Provisions and monthly wages are only compensated for when they are general average, according to the "Norske Sofartslov" (Norwegian navigation laws); they are only calculated for that time which is supposed to elapse in getting the occurred damage repaired, and in accordance with the regulations which the Committee may provide. Monthly wages and provisions.

(e.) When any vessel that is assured in the Association may have caused another vessel damage by collision, and in consequence, either by legal judgment or by an arbitration arrangement, which the Association may have agreed to, is bound to make compensation for such damage, the Association will pay (in proportion to the extent of the assurance) two-thirds of the compensation, though the Association is not liable thereto, unless the whole damage, including what the ship itself may have suffered, amounts to more than one specie dollar per "Kommercelæst" of its registered tonnage. Damage by collision.

Should the calculated compensation for damage done to both vessels, and consequent expenses, exceed the amount for which the vessel is assured in the Association, the Association will in no case pay more than the amount of insurance.

(f.) The Association considers the assurance of the average money falling upon the same unnecessary, and only allows compensation for the expenses caused thereby, when it can be supposed that the assurance has been inevitable, and that the premium is not disproportionably high. Assurance of average money unnecessary.

(g.) Whilst lying up, during the additional premium period, the vessels are not assured by the Association against fire. Fire risk during lying up.

28. When an accident happens to a vessel assured in the Association, the commander shall do his utmost to prevent and lessen the loss, and, in this respect, has the same duties to the Association as to the owner. Duties of commander in cases of accident.

He shall also immediately send to his owner a report of what has taken place, as complete as possible, which report the owner, without delay, and, if required in the original, must impart to the Committee, so that those arrangements may be made which may be deemed suitable under the circumstances.

Sweden and Norway.

Should the commander be the sole owner and member, the report is to be sent direct to the Committee.

Should either the commander or the owner omit to make immediate report, or should the owner act against the provisions made by the Committee, and which have been imparted to him, the Association shall be released from the loss which can be proved to be in consequence thereof.

Solemn declaration or extended sea-protest.

29. At the first place where the master and crew of the vessel come ashore, after an accident has happened, they are, as soon as possible, to enter an extended sea-protest or solemn declaration, concerning what has taken place.

Showing log-book.

The noting of a sea-protest is not necessary for the Association, but, on the other hand, the master of the vessel, within twenty-four hours after his arrival, must produce his log-book to the Consul for the United Kingdom, or (should there not be such a person appointed in the neighbourhood) to the nearest magisterial official, who will have to attest the books being shown.

Should the Association have an agent at the place, the log-book is to be shown him.

Estimate of damage.

30. Should any vessel assured in the Association arrive under average, at a place where the Association, by a commissioner or agent, is enabled to take charge of its own interests, it will be at the option of the Committee or the commissioner or agent, whether the extent of the damage shall be decided by a legal assessment, or by a survey and estimate performed at the instigation of the Committee.

At places where the Association has not appointed an agent, the master of the vessel shall omit the estimate, if the damage be of such a nature that the extent of the repairs may be easily judged on its return home.

31. As a supplement to Article 81 on the plan, the following provisions are to be in force:—

Adjustments of damage objected to by the assured.

Should the assured object to the Committee's decision as to his claim for compensation, he can demand the case to be laid before the Directory. This must be done in every case before he can bring it before a legal court.

Prescription of claim for compensation.

The assured loses all right of complaint for any claim of compensation, should it not be prosecuted within three months after the Association has declared that it will not agree to the claim of the assured.

Award by agreement.

32. The Association has a right (without regard to the forms which by the plan, or in the foregoing are set forth), by agreement with the assured, to decide the amount of compensation, but in such cases must report the matter to the Directory.

33. When a disappeared or deserted vessel, according to the plan's Article 67, is considered lost, it will participate in the Association until the end of the year for which it has paid, or is liable to pay premium, and the amount of compensation will be computed in the same year.

Such a vessel must pay the fixed contribution for the year from which the last news is dated, as well as one third of the premiums stated in these Statutes, up to the date when it is considered lost.

34. Should the assured (by the adjudged award) have received more than, in accordance with the provisions in Article 43, is due to him, he is bound to refund the excess, so that justice may be shown to all who have suffered damage during the same year.

(Articles 35 to 47 inclusive, of no interest to agents).

Chapter VI.

General Provisions.

Reward.

48. The Committee is empowered to reward every person who has rendered himself worthy, by extraordinary or remarkable efforts, in rescuing a vessel assured by the Association, or its crew.

Investigation of a voyage.

In a case of accident the committee may likewise submit the navigation (according to the log-book) to the judgment of competent nautical men; and should the accident be found to have been caused solely by the captain's bad management, this may be a reason for the Committee's refusal, for a certain period, to assure a vessel under his command.

The foregoing Statutes which contain all the provisions which have been agreed to by the General Meetings up to date are to be in force from the 1st of March 1872. The elder Statutes from the same time being rendered invalid.

The Direction for the Mutual Ship Assurance Association in Christiania
2nd March 1872.

N. A. Andresen.
Jorgen H. Heftye.
Jacob Ihlen.
Plade Stranger.
Axel Winge.

Sweden and Norway

REGULATION for WAGES and PROVISIONS, so far as the same, according to article 27 D, are subjects for compensation.

1. Provisions, whether during stay on board or in lodgings ashore, to be computed according to the stated amount, provided it does not exceed—

For the master of the vessel	- - - -	40 skillings daily.
„ first mate	- - - - - -	40 „ „
„ rest of the crew	- - - - -	30 „ „

2. Wages for the master of the vessel, will be computed in accordance with the agreement made between him and the owners.
What this may exceed 25—Twenty-five—specie dollars monthly, will not be made good.

3. The wages of the mates and the rest of the crew will be in accordance with the crew's list. But should higher wages be stated, and paid, the compensation shall not exceed—

For the chief mate	- - - - - -	15 spd. monthly.
„ second mate	- - - - - -	10 „ „
„ boatswain and carpenter	- - - -	10 „ „
For an able seaman	- - - - - -	9 „ „
„ ordinary seaman	- - - - - -	6 „ „
„ ship's boys	- - - - - - -	3 „ „

4. The foregoing compensation cannot be demanded, if the crew have been employed as labourers during the average, and as such, have had pay reckoned.

The Direction for the "Skibsassuranceforeningen" in Christiania,
2nd March 1872.

N. A. Andresen.
Jorgen H. Heftye
Jacob Ihlen.
Plade Stranger.
Axel Winge.

GENERAL NORWEGIAN MARINE ASSURANCE PLAN, published by the Committee of Management of the "Norske Veritas," October 1871.

CHAPTER I.

Marine Assurance in General, and Signification of the usual Expressions and Terms contained in the Policy.

1. BY marine assurance effected in accordance with this plan, is understood a contract, whereby the underwriter, upon certain conditions contained in the policy, for the stipulated premium, undertakes to indemnify the assured, for the loss he may suffer by accident which may occur, during the period of assurance, to the object assured. What is understood by marine assurance.

2. Every interest, which any person may have, in the safe arrival, of either ship or goods, sent over the sea, and which can be valued in money, is an object for assurance, although commander and crew cannot insure their wages. Interest. The conditions for being able to insure.
An assurance has only validity so far as the person, for whose account it is effected, has interest in the assured object. Wager assurance is invalid.

3. Objects for insurance are in particular :— Special objects for assurance.

Ships.

Freight.

Passenger money.

Goods.

The freight, duty, and expenses, resting upon the goods at the place of destination.

The profit, expected to be gained upon the goods, at the place of destination (imaginary profit).

Sweden and Norway.

Commission.

Bottomry claims.

Disbursed average money, and

Other claims which may have to be liquidated by the ship, cargo, or freight.

The risk which underwriters undertake is also an object for assurance (re-assurance).

Assurance of one of these objects does not include assurance of any other.

It is the concern of every person who requires an assurance effected, to see that the assured object be properly described in the policy. The underwriter is not bound by any assurance where the object is not correctly described.

Assurance of "ship or hull."

4. When a "vessel" or "hull" is assured, this generally includes the body of the vessel with sail, rigging, and inventory; whereas not provisions and other outfit.

If the vessel, when insured, was not sheathed; later underlaid metal sheathing is considered as a separate portion of the vessel, which was not included in the assurance, the value of which will be computed according to its cost, or the valuation when last surveyed (*vide* Article 78, conclusion).

By assurance of fishing vessels, is not therein included the fishing implements, when such are not expressly named in the policy.

Assurance of "wares or goods."

5. Assurance of "wares" or "goods" (unless in the policy expressly stated) does not include gold, silver, or platinum, whether coined or uncoined, paper money and securities, jewels and works of art, fancy articles, antiquities, and living animals, nor petroleum, gunpowder, nitro-glycerine, and other explosive materials.

If the assurance is to concern cargo, consisting of guano or other manure, corn, potatoes, chicory roots, fruit, seeds, cork, hay, turf, rape, or linseed cake, bones, bone black, bone ashes, raw gypsum, lime, coal, pig-iron, railway rails, ores, marble, stone, slate, or salt, this must be expressly stated in the policy, should the named objects occupy one-third, or more, of the vessel's capacity.

Goods assurance, with "settlement according to net value.

6. Should "settlement according to net value" be stipulated in the assurance on goods; when the goods arrive at the place of destination, under average, the damage shall be computed according to the proportion between the net value of the goods in their damaged and undamaged state, viz., with deduction of freight, duty, and expenses at the place of destination (*vide* 55). Freight, duty, and expenses at the place of destination cannot in such cases be separately insured by the owner of the cargo.

"Freight and outfit" assurance.

7. The vessel's outfit can either be assured in conjunction with the freight or separately. Should the freight and outfit be assured separately, their combined assurance sum must not exceed the gross amount of the freight, unless the vessel either contains provisions for further voyages, or for other reasons is more largely supplied than is really requisite for the voyage, and this is stated in the policy.

Assurance of "freight and outfit," under one head, will be treated as assurance upon gross freight.

Where net freight is assured (if nothing else has been specially stipulated) the same is valid for two-thirds of the gross freight.

Where nothing else is stated, a freight assurance is presumed to concern the gross freight of the vessel's whole combined cargo of goods, with the exception of goods taken to sea by the master and crew for their own benefit. On the other hand, it does not concern the freight of goods, which are not yet taken on board.

Assurance of freight for several voyages.

8. Should the freight be assured for several voyages under one head, the assurance will concern the freight of the goods which the vessel has on board at any time.

When the freight for several voyages under one head is stipulated for, it will have to be decided by judgment, based upon the current freight, how much is to be placed upon each single voyage.

If the vessel has various freights, accordingly as it receives orders to go from one place to another, and should be wrecked, previous to receiving such orders, the freight will be computed at the medium amount of the whole stipulated freights.

Should the vessel sail in ballast during any of the above-mentioned voyages the assurance will be valid for outfit.

Bottomry assurance.

9. In assurance upon bottomry, without a statement of what is pledged for the loan, the ship as well as its cargo and freight (should it be laden) shall, in relation to the underwriter, be considered as bottomried.

Assurance value.

10. As the insured object's value, failing other agreement (valuation) will be considered by assurance on:—

(a.) A vessel: Its value at the time the assurance was effected;

(b.) Freight: Its gross amount, therein included primage or gratuity that may be stipulated. Should no freight have been previously decided, this will be estimated by judgment according to the current rates of freight at the time when the assurance was effected.

(c.) Passenger money: Its gross amount.

(d.) Outfit;

Sweden and Norway.

(d.) Outfit: Expenses of procuring provisions, amount of the wages paid in advance, and other ship expenses at place of departure, on account of the voyage.

(e.) The Cargo: Its value at the place of departure (invoice value) including expenses on the same, until it has been taken on board, so far as they are not to be paid by the vessel. On the other hand, freight is not herein included, nor is duty and expenses at the place of destination.

(f.) Imaginary Profit: 10 per cent. of the above treated value of the goods.

(g.) The Goods belonging to the Commander or Crew: Its cost, with the addition of the current freight at the time when the property was taken on board.

(h.) Bottomry: Its amount, including bottomry premium.

(i.) Average Money: The amount of the whole paid average and ship's expenses during the average, with the addition of the assurance premium—in one word, the whole of the disbursements.

Valued and open policy.

11. It is considered as a mutual agreement about the value of the assured object (valued policy) when the expression "computed at the value of—Sp. dollars" is inserted in the policy.

Whereas it is considered as an open policy, wherein no agreement has been come to as to the value of the object, when the expressions—

"Assured—Spd. upon N. N. object."

"Assured for—Spd.," or similar words, are made use of in the policy.

Voyage assurances beginning and ending.

12. When assurance is effected from one place to another, the risk rests by assurances upon—

(a.) The hull, freight, or outfit, from the time the vessel began to take in its cargo or ballast, and until, at the place where the risk ends, either without unnecessary delay it has discharged the cargo or ballast, or began to take in a new cargo, or ceased to discharge, either for the purpose of laying up, or going to another place Should it continue longer than 28 days from arrival, before the discharge of the cargo, and longer than seven days before the discharge of the ballast is ended, the risk ceases, unless the assured proves that no unnecessary delay has occurred.

(b.) Goods and imaginary Profit: From the time the goods leave land to be put on board, until they again, without unnecessary delay on the part of the assured or his agents, are taken ashore. The usual on board and ashore, bringing of goods in lighters, is included in the risk.

(c.) Bottomry: From the time the loan was made until at the appointed place of payment, without unnecessary delay, the same has been demanded and paid.

Allowed deviations.

13. By voyage assurance, the risk includes such deviations from the direct course of sailing as may be deemed customary, such as where vessels coming to Europe from transatlantic ports, touch at Queenstown or Falmouth for orders; vessels in the Mediterranean trade call at Gibraltar for orders; vessels in the Baltic trade call at Elsinore or Copenhagen for orders or for provisions, or where steamships touch at intermediate ports.

The extension of the risk insured to a whole district with several ports as well as when the place of destination is alternatively or accumatively designated.

14. When the assurance is effected to a country, a part of the world, or on the whole to a district which includes several ports, the risk is considered to cover the calling at a place for orders, and the departure from thence to the loading or discharging place, such places being situated within the indicated district.

When the assurance is effected to one place *or* another, the risk ceases at whichsoever of these places the vessel first arrives.

When the assurance is effected for *several places* there must be no deviation from the successive order in which the places are named in the policy; but it is not necessary that all of them be touched at.

When the assurance is effected to a place and (or) others, all may be called at in any order.

Assurances for several voyages under one head.

15. When, in the same policy, assurance is effected for several voyages under one head, such assurance shall be treated as though, in separate policies, there had been effected assurance for each distinct voyage, though, so that the risk upon the vessel continues during the time between the loading and discharging of either cargo or ballast, when no unnecessary delay has taken place. Should the premium be stipulated under one head, the whole will however be considered as one risk with regard to the return of premium. (Article 75, conclusion.)

It will also be regarded as a separate voyage should the vessel depart in ballast, either to take in cargo at the place of destination, or to lay up.

Separate assurance of single parcels of goods.

16. When, in a policy for several parcels of assured goods, there are appointed separate sums of assurance, and the parcels by marks, or other means of distinction, are so noted in the policy that they can be thereby distinguished, each parcel will be considered as separately assured in every respect.

Sweden and Norway.

The simple statement that the assured consists of a certain number of cases, bales, casks, &c., the value of each single package of which appears in the policy, is not sufficient to regard each package as separately assured, unless this otherwise by the policy can be seen to have been the intention.

As separately assured, will always be considered parcels of goods, for which the compensation conditions are various.

Risk when the assured objects have to be taken out of the vessel.

17. When, in cases of average, it is necessary to bring the assured objects ashore on board other vessels, or on the whole out of the vessel, the risk continues.

Time assurance, beginning and ending.

18. By time assurance, the days named in the policy are reckoned, inclusive from midnight to midnight, the basis to be the hour at that place where the object is.

Where a vessel is at sea, at the time when the time assurance lapses, the assured may, before expiration of the policy, require its being extended monthly, until the vessel's first arrival in port, at a suitable premium.

To obtain the benefit set forth in the provision in Article 67 as to vessels about which no information is to be obtained, the assured will have to keep the policy in force until the expiration of the period named therein. With regard, however, to a deserted vessel, the provisions in Article 19 will apply, even should the assurance afterwards have ceased, provided it was assured at the time that it was deserted.

Risk where the object was damaged when the assurance lapsed.

19. If the assured object, at the time that the assurance lapses, is in a damaged state, and the damage is an object for compensation, the risk will continue for the immediate consequences of such damage; but on the other hand, not for other accidental damage, until the object, without unnecessary delay, according to circumstances, is either repaired or sold.

Stipulation: "Free from war molestation."

20. By the stipulation: "Free from war molestation," the underwriter is released from compensating all the loss which may arise as a consequence of war (piracy, however, not included). The risk for a voyage assurance completely ceases, when the vessel is either captured by a power that is at war, or from fear of war molestation, deviates essentially from its course; or for this reason, or on account of seizure, delays the voyage longer than 48 hours.

The stipulations "upon safe arrival" and "against total loss."

21. When the assurance is effected: "Upon safe arrival," or "against total loss," the underwriter for the ship is only liable for compensation where the vessel is lost or condemned (47 and 67).

The underwriter of goods is likewise liable for compensation, should the same, or any part thereof, on account of accident, for which he is answerable, have to be sold in a port of refuge, or for other reasons, cannot reach the place of destination.

The stipulation: "Free from damage except in cases of stranding."

22. By the stipulation: "Free from damage except in cases of stranding," particular damage is compensated for (such being object for compensation), only in the following cases:

(a.) When the vessel is aground, and either cannot be got off, or only by the aid of extraordinary means, such as foreign help, discharging, or jettison of the cargo, or cutting away the masts, and the vessel thereby becomes so injured, that damage, at all events, to a considerable degree, can have arisen thereby.

Should a vessel be got off by ordinary means, such as manœuvring the sails, hauling by the anchors, or a steamer by the aid of its engine, it will not be considered a case of stranding.

(b.) When the vessel has suffered such damage that it cannot by any available means be kept afloat by the pumps, but continues sinking, or to escape which it is run ashore, or when it capsizes.

(c.) When the damage is caused by fire.

(d.) When the damage consists in a portion of the goods falling into the sea, and in this, or any other manner, is totally lost outside the vessel. Compensation however cannot be claimed when stranding has not occurred, if the goods which are in the vessel have become damaged, either dissolve, melt, or in any other manner become valueless; nor when lost by working the pumps.

The damage to goods, which has occurred before the vessel's last departure from port, will not be an object for compensation, even should stranding occur later.

The stipulation: "Free for N. N. per-centage of underweight or undermeasure."

23. When an assurance is effected, "Free for N. N. per-centage of underweight or undermeasure," there shall, according to equitable judgment, be made a deduction for that addition in weight or measure which the damnged goods may have acquired by moisture. The whole damage will become an object for compensation when it exceeds the stipulated per-centage.

The stipulation: "Free for the first N. N. per-centage of underweight or undermeasure."

24. When an assurance is effected, "Free for the first N. N. per-centage of underweight or undermeasure," this per-centage will in no case be compensated, should the goods reach the place of destination.

Re-assurance.

25. When the assurance is declared as being a re-assurance, it is considered as undertaken upon the same conditions as are applicable to the original assurance, and the underwriter

writer of the re-assurance, in cases of accident, is liable to make the same compensation as rests upon the original underwriter. Sweden and Norway.

The compensation and return of premium is divided over the re-assurances, according to the proportion the re-assured amount makes of the sum which the chief underwriter had assured upon the object, at the time the re-assurance was effected.

Chapter II.

Circumstances which cause the Assurance to be withdrawn, or the Risk to cease, or be limited.

26. The whole assurance becomes invalid, and every compensation which otherwise might possibly accrue to the assured, lapses in the following cases:— Invalidation of the assurance by wrong statements, suppression, and fraud.

(a.) When either the assured, or the person who effects the assurance, at the time the policy is being effected, omits to impart every particular he may be in possession of, and which presumably would have caused the underwriter either to refuse the assurance entirely, or only to accept the risk at a higher premium. Herein included the taking on board of explosive articles, or such as are of a dangerous nature.

(b.) When on effecting the assurance, any wrong information is imparted, with the probable intention of inducing the underwriter to take the risk, or of obtaining a lower premium.

(c.) When the person concerned, after having required the assurance, but previous to its being effected, receives information whereby the risk may be supposed to have been increased, and omits to impart the same to the underwriter as quickly as possible.

(d.) On the whole, when the assured endeavours to defraud the underwriter, either during the effecting of the assurance, in claiming return of premium, or in demanding compensation.

It is considered to be an attempt at fraud, when the assured, wilfully, at several insurers together, assures the object for more than he has reason to suppose it is worth, and the over insurance is not expressly effected only against those dangers which are not covered by the other assurances (*see* Article 38).

27. If in assurances of a vessel, or freight, it is not stated that the vessel is clinker built, the underwriter is only liable, in cases of damage, to pay half of the compensation he would otherwise be subject to. Limitation of the risk by omitting to state that the vessel is clinker built.

28. The risk on assurances for the owners ceases, as long as the vessel goes with cargoes, or into waters which exceed its bearing capacity or navigation mark. Exceeding the bearing capacity or navigation mark.

29. Should a vessel described in the policy not belong to the same country as that wherein the assurance contract is concluded, the nationality of the vessel must be declared, unless it can be proved that the same was known to the underwriter, otherwise such an assurance will be considered as "free from war molestation." Even should the vessel described in the policy be neutral, still every assurance of goods, or such like, will be considered "free from war molestation," when the owner thereof does not belong to the same country as that in which the assurance is effected, and this has neither been declared to the underwriter, on filling up the policy, nor can be proved to have been known by him. Limitation of the risk by omitting to declare the nationality of the vessel.

30. In voyage assurance, it is generally presumed that the vessel has not put to sea earlier than the day before the assurance was requested, if the risk commences at the place of assurance, or else that the information that she was ready for sailing or had departed, had not arrived earlier than by the last post before the request of assurance was made. Otherwise the assurance will be considered as only undertaken for those accidents which have occurred after the effectuation of assurance, with the obligation, on the part of the assured, in cases of accident, to prove that the ship was in undamaged existence at the time when the assurance was undertaken. Risk when the vessel is at sea when the assurance was effected.

In time assurances, it will always be incumbent upon the assured to prove that the object was in undamaged existence at the commencement of the risk.

31. The same invalidity, arising from the concerned person not imparting, although known to him, that he was, at the time the assurance was requested, acquainted with the assured object having suffered damage or was in danger, will also accrue, when the damage or danger in question was known at the place where the assured was, at the time he requested the assurance; even though the damage or danger cannot be proved to have come to the concerned person's own knowledge. That the accident or danger was known at the place where the assured was, has the same effect as though it certainly had been known by himself.

In every case where the assured object was in a damaged state, or in danger at the time that the assurance was requested, the underwriter can demand, as a condition for compensation, that the assured, his agent, or subordinate, will endeavour, at the telegraph office, Duty of procuring proof of not having received information of mishap or danger.

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office, or of other persons who might have brought information of the accident or danger, to obtain proof that no such information has been received or sent from any of them.

Risk when there is a deviation from the assured voyage.

32. When a vessel, under voyage assurance, with the will and knowledge of the assured, without necessity, deviates from its direct course, to call at other ports than those named in the policy, or, when these are not called at in the order in which they are placed in the policy, the risk ceases as soon as this deviation takes place, and does not afterwards take place (*see* Articles 13 and 14).

Should the deviation from the assured voyage have taken place without the will and knowledge of the assured, the only consequence will be, that in the owner's assurance there must be paid a suitable premium for the increased risk which the deviation may have occasioned the underwriter.

Deviation from the voyage, on account of contrary wind or accident, as well as to save human life, neither causes the risk to cease, nor does it cause the assured any additional premium.

Risk when the whole voyage is altered.

33. The risk ceases, when the vessel goes upon any other voyage than the one assured, if this be with the will and knowledge of the assured; but should the assured not have had any opportunity of being acquainted with it, the risk will continue until the vessel has reached a port to which, before it again departs thence, it has become known to him that it was to go.

That the assured may have the benefit of this provision, it will however be necessary for him, immediately, to impart to the underwriter information of the alteration that has taken place, as soon as he has learnt the same. He will also have to pay an increase of premium, should the risk of the new voyage be judged to be greater than that named in the policy, whereas he cannot demand return of premium, should the risk have been diminished.

When assured goods are forwarded in another vessel.

Should the assured goods be forwarded in any other vessel than that named in the policy, the assurance ceases, unless, in accordance with Article 54, it has been caused by an accident which has happened during the period of insurance, or without the will and knowledge of the assured, after the risk has commenced.

Change of captain.

34. Should the owners, whilst the risk continues, without the knowledge and will of the underwriter, appoint a fresh master, of whom they know, either that he has previously been guilty of defrauding assurance, or, that any assurance company, from want of confidence in him, has decided not to assure upon him as master, the owner's assurance will be invalidated so long as the vessel is commanded by such a master.

Sale of the assured object.

35. Should the assured object be sold, without the assured at the same time making over the assurance to the purchaser, the same will cease from the time when the sale took place. In every case the assurance ceases from the time that the sale, without the underwriter's sanction, has taken place, when it can be shown that the new owner has been guilty of assurance fraud, or that any other assurance company, from want of confidence, has announced to him their decision against assuring for him.

Change in a vessel's nationality.

When a vessel, without the sanction of the underwriter, changes its nationality, the underwriter to the owner's assurance will be free for loss which may result from this.

Examination of the vessel's seaworthiness.

36. In every owner's assurance the underwriter, at any time when such can be done, can demand that the vessel's seaworthiness be examined by lawful survey, the expenses of which, however, will, in every case, be for the account of the underwriter, who will also have to compensate the expenses caused by the delay; if during such survey, no important faults have been found with the vessel.

If the owner will not allow such an examination, compensation cannot be demanded for later losses, unless these can be proved not to have arisen from some deficiency in the vessel.

Steps when war breaks out during the risk.

37. Should war break out after the assurance has been effected, and thereby, the assured object come into danger of capture, the risk ceases for war molestation, if the assured does not take every possible care that the vessel, as soon as possible, may get into safe harbour, to await the underwriter's decision, whether on payment of the assured article's portion of the thereby caused expense and liability, he will have the vessel laid up or allow it to sail further, or will take upon himself the right of possession of the assured object on payment of the amount of assurance.

The underwriter cannot, however, require the vessel to lie longer than three months, but should the vessel have to lie longer, he is bound to pay the assurance amount, on the right of possession of the property insured being made over to him.

Chapter III.

Over-assurance, Return of Premium and Abolition of Assurance.

Over-assurance's invalidity.

38. When an object, by several assurances on different days, has been assured for more than its value, the exceeding, and thus invalid assured amount, will be considered, by right of precedence, to be abolished from the last effected assurances; on the other hand, should the assurances have been effected on the same day, the over-assured amount will be abolished, proportionably, from the amounts of the whole assurances. An over-assurance is considered invalid, even should it be elucidated that the underwriter, who has undertaken the same, will give compensation for loss, which is not made good by the original underwriter, unless the assurance be expressly effected alone for such loss.

A later over-assurance will not acquire validity by the abolishment of the earlier assurance, unless this takes place before the risk has commenced.

Return of premium.

39. Return of premiums can only be demanded in the following cases:—

(a.) When the assured, unintentionally, has effected assurance for a larger amount than that which is an object for assurance.

(b.) When assured goods are shipped by other vessels than the one named in the policy, or when they are not shipped at all, so that the risk on this account ceases.

(c.) When the risk ceases previous to sailing, because the vessel makes another voyage than the one assured, or because the voyage for other reasons is entirely abandoned.

(d.) When the assured object is lost, or has to be sold on account of sea damage, before the risk has commenced.

When, in accordance with the provisions of this article, return of premium is to be allowed, the underwriter has the right to retain $\frac{1}{4}$ per cent. of the assurance amount, if the premium amounts to $\frac{1}{2}$ per cent. or more, and in other cases half of the premium.

Of a less amount than 50 specie dollars, return of premium cannot be claimed.

Return of premium when the object was in a damaged state at the commencement of the risk.

40. Should it appear, after the settlement of the assurance, that the object assured was in a damaged condition at the time that the risk commenced, the assurance will remain in force as long as the object is in such a state, even with a valued policy, but only for the real value the object is at any time judged to have. Should it be in such a damaged condition that on this account it is afterwards lost, or has to be sold, the return of premium can be claimed for the possibly too large amount assured. Should the assurance however be a renewal of an elder assurance, half of the premium will be returned, without other regard to the decreased value of the object.

Prescription of return of premium.

41. The right to the return of premium is lost, should it not be claimed within a month, after the circumstances upon which the right is based have come to the knowledge of the assured.

In all cases right to return of premium is lost, when not claimed within half a year from the expiration of the risk.

Annulling the assurance when the premium is not paid.

42. If the premium be not paid on demand, as soon as it is due, which in general is considered to be at the settlement of the assurance, the underwriter, with 48 hours' notice, can annul the assurance; and should the premium not be paid within this respite, he will only be answerable for those accidents which can be proved to have happened before the expiration of the named 48 hours. In this case, return of premium shall be allowed according to equity, but the underwriter has still the right to retain as much as is stipulated in Article 39.

Pledging or transporting the policy.

The provisions in this article are not applicable, when the underwriter has given his sanction to the policy being transferred or pledged to another person, who has not undertaken to pay the premium.

When the transport or pledging of a policy has been announced to the underwriter, he shall, in case the assurance, for some reasons or other, is annulled before the period named in the policy, give notice thereof to the person to whom the policy is declared to have been transported or pledged.

The anulling of the assurance on the insolvency of the underwriter.

43. Should the underwriter become insolvent, the assured can annul the assurance, with 48 hours' notice, and require full return of premium, according to judgment, for that portion of the risk which has not run out, if, on demand, security for the amount of assurance be not given.

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Chapter IV.

Compensation.

What, in general, is an object for compensation.

44. In general, compensation will be paid for every loss which the assured may suffer by any accident happening to the assured object, caused by uncommonly hard weather, by sea breach, striking, collision, floating ice, fire, robbery, war, or piracy, or from other similar accidents, all in the manner, and with those limitations, stipulated in this plan, or in the policy. In the same manner will be compensated expenses incurred in warding off such misfortunes, which else would fall upon the underwriter, and also expenses in proving loss which is an object for compensation.

Loss from the fault of the crew or other persons.

45. Loss upon the assured object will also be compensated, where such is a consequence of fault on the part of the captain, crew, or others; but with the exception that, in owner's assurance, compensation will not be paid for the consequences of the captain's omission to keep the vessel properly equipped and manned, or, during its laying up, not taking care that it be under sufficient superintendence, endeavouring to run the blockade, having false or incomplete papers, carrying contraband goods, or being guilty of smuggling, or that the vessel bears a cargo to which, according to survey or assessment, it was not adapted. Has the captain, without necessity, omitted to take a pilot in waters or courses where pilots usually are made use of, the underwriter is entitled to deduct up to 20 per cent. from the amount of compensation. In these cases proof rests upon the assured.

That an assured vessel, or freight, is made answerable for damage caused to others by the fault of the crew, only concerns the underwriter in cases of collision.

Damage where the assured is culpable.

46. Damage, which the assured is the cause of, will not be compensated; still the master, even though he may be the owner, does not lose compensation for damage, which is a fault of the manœuvering of the vessel, or its navigation, when he has acted according to his best judgment, and has not been guilty of gross carelessness.

Condemnation of a vessel.

47. An assured vessel is considered an object for condemnation and sale, when the reparation of damage, caused by striking, collision, capsizing, ice, fire, or explosion, for which the underwriter is answerable, without the addition of commissioner's salary, expenses of procuring money, or such like, by lawful assessment is computed to more than three-quarters of the ship's assurance value, and besides, of these expenses, the repairs of the hull constitute more than half of the assurance valuation.

In other cases, the vessel ought not to be condemned unless the compensation would be greater in case of reparation than when the ship is sold. These rules will also come to application in assuring freight, outfit, and passenger money; but in other assurances the underwriter cannot oppose the condemnation of the vessel, when the owner, in his position to the assured, is entitled so to do.

Compensation for a condemned vessel.

48. When an assured vessel is condemned, the loss is computed in such a manner that the net proceeds produced by the sale of the wreck and inventory is deducted from the assurance value of the vessel.

Valuation of what is assured, particularly after loss.

49. In lack of agreement as to the value of an assured vessel, this is generally arrived at by a lawful estimate, of which the underwriter shall be advised. Estimation, which becomes necessary after a loss has occurred, shall, in all cases, be performed at the place of residence of the underwriter, and on this occasion both parties shall produce every particular known to them which may guide in giving the estimate.

The value of other assured objects will be decided in the same manner when no arrangement thereabout has been made, and it cannot be shown in any other way, such as by the charter party, bill of lading, invoice, &c.

Survey and estimate of damage to a vessel.

50. The damage to an insured vessel shall be surveyed before reparation, and the expenses of repairs be specially estimated in lawful form, during which the master or owner will have to see that the surveyors give their idea as to the origin of the damage, so far as can be judged by the appearance and state of the damaged parts; should this not be done, the damage is only an object for compensation, when the circumstances under which it occurred, according to the extended protest, plainly show that it is not a consequence of deficiencies or faults in the damaged portion.

If, during survey, it should be found necessary or advantageous to take the vessel to another place to have the damage repaired, the assured cannot object, should the surveyors declare that this is justifiable, nor when the underwriter, on his own responsibility, will undertake the removal of the vessel.

Compensation cannot be claimed according to the estimate, but the bills for repairs must be produced, and the compensation computed from them, unless the estimate be lower, in which case the latter will form the basis. This compensation will also be reckoned according to the estimate, when the vessel by compulsory dispositions has gone out of the ownership of the assured, and thus he is unable to produce the bills for repairs.

A damaged

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A damaged vessel cannot unconditionally be required to be put into its previous state, when the same cannot be done without disproportionable expenses, and whereas with less expense it may be made perfectly warrantable and seaworthy; thus rebuilding cannot be required to straighten a curve (if bottom or top out of shape), when the vessel may be made perfectly warrantable by a less repair; nor can it be demanded that precisely the same materials shall be employed in the repairs as those whereof the vessel is built, when these are disproportionably dear at the place of average.

In all these cases, however, the surveyors have to value the loss which the owner suffers thereby, and reasonable regard ought to be had hereto in the computation of the compensation.

Compensation for particular damage to a vessel.

51. With regard to expenses in repairing particular damage on an assured vessel, which is an object for compensation, the following rules apply in computing the loss:—

(a.) In damage on the open sea, which has not been caused by striking, collision, capsizing, ice, fire, or explosion, half is to be deducted from the expenses of repair for the difference between old and new, and also the value of what remains of the damaged vessel.

(b.) From the expenses in procuring metal sheathing, with the usual caulking under the sheathing, and the necessary docking or keelhauling of the vessel, will be deducted the proceeds of the old sheathing, and from this residue, one-fifth yearly for the age of the sheathing at the time it was stripped off. For wooden sheathing, and caulking the same, this deduction to be fixed at one-eighth yearly.

For other periods than a whole year, the deductions to be computed in proportion. Metal sheathing which is five, and wooden sheathing which is eight years old, or more, will not be compensated for in any case; nor are the expenses of the usual caulking under the old sheathing.

The loss of wooden sheathing, or nailing the same, are neither to be compensated for when, at the time the average occurred, there had elapsed a longer period than three years since the sheathing had been completely re-nailed; should the damage be of the nature treated of under letter (a), a further quarter will be deducted from the amount of compensation, according to the foregoing computation.

(c.) In all other damage than the foregoing will be deducted one-third, for the difference between old and new, and besides, the value of what may be remaining of the damaged. Nothing, however, will be deducted for anchors, and for anchor chains, only one-sixth.

(d.) For damage to the hull, sustained within a year from the time the vessel first put to sea, nothing will be deducted for the difference between old and new, when the damage is not of the nature treated of under letters (a) and (b).

The above-mentioned deductions drop, either completely or partially, according to circumstances, when, instead of the damaged inventory, second-hand objects are procured, and thereby a saving in the expenses has occurred.

Damage to vessels which is not compensated.

52. In the assurance of a vessel there is no compensation allowed for repairs of damage, the cause of which is wear and tear, worm, elder faults or wants, or in such weakness of the damaged portion of the vessel or inventory that it cannot be considered to have been in a seaworthy or justifiable state.

To such weaknesses will be reckoned, when a vessel at sea becomes leaky, without this being caused by uncommonly hard weather, also when metal or wooden sheathing falls off at sea, when the keel or kelson is broken or damaged at sea, or when the vessel has to be furnished with more fastenings than it had before, unless these damages have been caused by extraordinary circumstances, such as collision, the swelling of the cargo in a vessel that is full of water, or that the cargo has broken loose in the hold.

To tear and wear is reckoned, and therefore not compensated for, when a sail is carried away or damaged by the wind, likewise when anchors, cables, chains, or running rigging is damaged or broken, without the damage being general average, or is caused by striking or collision, or is a consequence of the breakage of the spars or standing rigging. Damage which, according to this provision, shall not be compensated, will not become an object for compensation in consequence of the damaged object having been afterwards been cut away.

In assuring fishing ships and fishing tackle, compensation is not allowed for boats and implements which are damaged or lost whilst employed in fishing.

The damage of steamboat's machinery is not compensated, except in cases of stranding.

Painting, ornaments, &c.

53. Scraping and painting, gilding, glazier's work, and repairs of ornaments upon the vessel, are not compensated, except as general average.

Compensation for goods, &c., outside the place of destination.

54. Should assured goods be damaged by accident for which the underwriter is liable, and the vessel comes into another place than the destined one, or if the goods are undamaged, but the vessel is condemned at such a place (Article 47), it shall be decided, by lawful judgment, whether the goods ought to be sold immediately or be sent further to the place of destination, according to circumstances, either in the same or another vessel.

Hereby, in general, care must be taken that the undamaged be separated from the

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damaged as much as possible, and, when this can be done without disproportionable expenses, the undamaged goods be sent forward; this must also be done with the damaged goods, when the supposition is that they will not become further deteriorated thereby, and, besides, they are not so far damaged that further transport on that account may be deemed disadvantageous.

On the whole, all proceedings must be based upon what would be considered the most advantageous to the owner, had the goods not been assured. When the assured goods are sold at another place than the destined one, compensation is made for the difference between their assurance value and their net proceeds by sale, after deduction of freight, duty, and all expenses in connection with the sale.

Should the goods, however, produce more than the assurance value, the surplus will go to the benefit of the underwriter upon the imaginary profit to the amount of the assured sum. Should the accident not be of such a kind, that consequent damage is an object for compensation, the loss is still made good, should the goods have been undamaged, and it was only on account of the expenses connected therewith that they had not been forwarded.

Should the goods be assured with the addition of freight, duty, and expenses at the place of destination, there will be nothing to compensate for this addition, should they not reach their destination.

Compensation when goods arrive at their destination.

55. When assured goods arrive at their destination in a damaged condition, such being an object for compensation, the damaged goods shall likewise, as much as possible, be separated from the undamaged. The damaged goods are to be sold by auction, after lawful survey having decided their gross market value in an undamaged state, at their place of destination.

From this amount will have to be deducted the gross auction amount, and the per-centage, which the difference between these amounts make of the estimated value, will be considered as the per-centage of damage, which will have to be computed as compensation on the assurance amount of the goods, including freight, duty, and expenses at the place of destination, provided these are separately assured, as well as on the assurance amount of the imaginary profit, though, in combination, not to a larger amount than the estimated value in an undamaged state.

The survey expenses, with those of the auction, assorting, and preservation, are not taken into the computation of the damage, but are separately compensated.

Should "settlement according to net value" be stipulated in the policy, proceedings must be in accordance with the rule in Article 6.

When, after occurred average, goods are (in agreement with the regulations in Article 54) sent further, compensation is made for the extraordinary expenses connected therewith, so far as they are incumbent upon the goods, without regard to the damage being an object for compensation or not, the risk also continuing during the further transport.

In computing compensation for lost goods, the assurance value will form the basis.

Limitation of compensation liability for damaged goods.

56. It is not an object for compensation, when assured goods are damaged by rats or mice, deteriorate, diminish, or leak, without any accident having occurred to them, unless the damage to the goods is a consequence of the goods, on account of seizure or average, having had an extraordinary detention of over three months.

Unusual leakage of liquids is not compensated, in other cases, unless the vessel has struck, capsized, or been in collision, or has been discharged on the passage, in case of average, and it may be presumed that the damage has arisen from one of these causes.

Damage on sugar in cases or casks, coffee only packed in sacks or mats, leather, wool, or woollen goods, cotton, yarn, flax, hemp, all kinds of linen, or sail cloth will not be compensated except in case of stranding, or when the damage amounts to more than 10 per cent.

Damage is not compensated, except in stranding cases, for goods that can be included under the denomination: corn, seeds, edible roots, malt, meal or flour, groats, bread, fish, meat, cheese, fresh and prepared fruits, sugar in sacks, mats, or paper packing, hops, tobacco, spices, medicinal wares, oil cake, cement, potash, soda, salt, saltpetre, gunpowder, dyes and dyewares, jewels and fancy articles, metals and metal articles, feathers, furs, hides, skins, paper, prints, and other printed matter, timber and sawn wood, bark, moveables, instruments, alabaster, porcelain, earthenware and glassware.

The damage or death of living animals is not an object for compensation, except in cases of the vessels stranding or being lost.

These regulations also concern assurance upon imaginary profit on the foregoing objects.

Compensation for advanced freight.

57. When advanced freight is assured, compensation, in cases of accident, will be for the amount whereby the advanced freight exceeds the freight to which the owner is entitled, after therefrom has been deducted the prior entitled average contribution; likewise compensation is made for average contribution, which separately is charged on the advanced freight.

Compensation for freight.

58. In freight assurance is compensated the freight's contribution to general average, also expenses, which, according to lawfully settled general average statement, are treated as particular average on freight. Futhermore, compensation is allowed for loss of freight consequent upon the goods being damaged or lost, though in cases of damage, without loss

loss of the vessel having occurred, only so far as, agreeably to the provisions of this plan, the same would be an object for compensation by goods assurance. Sweden and Norway.

Should the vessel founder, or be condemned in accordance with Article 47, the loss to be computed in such a manner that from the amount of the freight there be drawn the net proceeds of the saved freight. Should the goods be conveyed further by another vessel, the expenses of the future transport, so far as they are incumbent upon the shipowner, will have to be deducted from the saved freight, in computing the net proceeds of the same. Should it be expressly stated in the policy that the assurance concerns "rest freight" (freight with deduction of advanced freight), the underwriter cannot, in case of accident, reckon off in the assurance amount that portion of the saved freight, which must be employed in covering the advanced freight. Average contribution resting upon the freight, as well as loss of freight, is fully compensated, when the whole difference between the freight and advanced freight has been assured.

By assurance upon "net freight" is compensated average contribution and loss of freight, in the same proportion that the assured amount bears to the gross freight.

59. By assurance of outfit is compensated damage of the articles belonging thereto, when, by assurance upon goods, the same would be an object for compensation. In cases of loss of the vessel, the loss is so computed that from the cost of the outfit is deducted the net product of provisions and other objects belonging to the outfit. Compensation for outfit.

60. When passenger money is assured, compensation is made for the expenses of the lodging ashore of the passengers during stay in harbour of refuge, as well as board during the same; compensation is also allowed for the expenses of the passengers' further transport, should the vessel be lost or condemned during the passage. Compensation for passenger money.

If the vessel has put to sea from the place of departure no regard is had to the passengers perhaps being responsible to defray these expenses themselves, when they in reality are paid by the ship's owner.

Should the passenger money not be paid in advance, compensation, in case of loss of the vessel, will be made for the thereby accruing loss of the same.

61. By assurance of bottomry money, compensation cannot be claimed, unless the bottomried objects are reduced in value by accrued damage, or are withdrawn from the bottomry creditor in a fraudulent manner. Compensation will be the difference between the bottomry claim and the net proceeds of the bottomried objects; burdens from an earlier date than when the assurance was undertaken (herein, however, not included claims upon the vessel for general expenses during the voyage) are not taken into account when computing the bottomry proceeds, unless it can be proved the same were stated on effecting the assurance. Compensation for bottomry.

62. In assurance upon average money, compensation is made for loss, consisting in the vessel, freight and cargo, by accident, becoming so reduced in value, that the person who has advanced the average money is unable to have his outlay covered by the proceeds. Compensation for average money.

If the average money has not been disbursed by the owner of the vessel or cargo, in computing the compensation, there will however be no regard had to the fact that the person making the advance has power to make a personal claim upon the concerned for the loss.

63. General average, which falls upon the assured object, is compensated according to average statement settled in lawful or usual manner at the place where the voyage ends; though bottomry premium and similar expenses, belonging to general average, are not compensated unless they are entitled to compensation according to Article 65. Compensation of general average.

Should an assured vessel go in ballast, such outlay will be computed and compensated as expenses for prevention of misfortune, for which the underwriter is liable, which, according to the laws in force at the underwriter's place of residence, are general average; but damage to such a vessel is computed for compensation with those deductions, and in that manner which is laid down for special damage.

Such loss or expense which has been incurred solely to prevent misfortune, not belonging to the underwriter's risks, are not compensated under any circumstances, even though they are general average.

Should the underwriter prove that in the general average statement a larger compensation has been computed the assured than is due to him, there will not be compensated that portion thereof which falls upon the assured object.

If in the general average statement, loss or expenses concerning the assured object be wrongly entered as particular for the same, instead of as general average, the underwriter has the choice of either computing the loss for compensation according to the rules in force for particular average, or causing the assured, at the expense of the underwiter, to get the statement altered in a lawful manner.

64. For provisions and monthly wages to master and crew, compensation can only be claimed in the following cases:— Compensation for provisions and monthly wages.

1. When the expense is general average.

2. When there was reasonable opportunity and access to dismiss the crew, and they were retained to execute work which else would have to be performed by others at the underwriter's expense, or where other people are hired for ordinary ship work,

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work, so as to employ the crew in the labour of repairs, in which case reasonable compensation shall be given for the work thus effected.

3. When a vessel which has lost its crew at sea, or has been deserted, is afterwards salvaged, in which case accrued expenses for master and crew during the journey to the vessel, as well as the wages during the same, will be made good, so far as the expenses concern the assured object.

Compensation of bottomry premium.

65. Bottomry premium paid to procure the average expenses, which it is presumed that the assured object is liable to, is not, by the shipowner's assurance, an object for compensation when there was time and opportunity, without any thereby caused delay, to receive money or credit letter from the shipowner, who in such a case is considered bound to provide for the money.

Should money or credit-letter not be obtainable from the owner, without causing delay of the vessel, bottomry premium of those expenses, which by assurance for the owner fall upon the underwriter, shall be compensated, provided the premium does not exceed the real expenses which can apparently be judged would have been incurred by such delay.

Premiums of bottomry loan accquired in European ports, or in other ports within the Straits of Gibraltar, are not compensated, and, when it has been acquired elsewhere only, provided the premium does not exceed 10 per cent.

By assurance for others than the shipowners, the underwriter, so far as the expenses are his liabilities, is bound to give compensation for bottomry premium which the assured has been obliged to pay.

If the assured himself takes bottomry for disbursed average money, or during the course of the voyage redeems the bottomry bond, he cannot claim more of the bottomry premium compensated than the agio he has himself been obliged to pay for the bottomry bond.

When he declares to the underwriter that he has become the owner of the bottomry bond, he shall, on the other hand, in proportion thereto, be free from risk, resting upon the bottomry creditor for later proved accidents.

In the same manner as bottomry premium will be reckoned loss in procuring money by the sale of the vessel's cargo.

Compensation for deck cargo.

66. Loss or damage to deck cargo, by being jettisoned or washed overboard, will not be compensated, whether the loss be general average or particular, except in case the deck cargo was jettisoned whilst the ship was aground; nor will there be compensation for boats which have been hanging outside, for water casks which have lain on deck, nor for other inventory that has been lying on deck, without having there their proper place when said articles were carried away or damaged.

Disappeared or embargoed vessel.

67. If after a vessel's sailing, or after the time it was deserted by the crew, or was last seen, without, according to extended protest, having been seen to founder, nothing has been heard of it on voyages:—

(*a.*) Between places in Europe, Iceland excepted, or within the Straits of Gibraltar, for five months;

(*b.*) To or from places in the West Indies, or the east coast of North Americoa, or places in Iceland, for eight months;

(*c.*) To or from places on the east coast of South America, or the west coast of Africa, for 10 months;

(*d.*) All other places for 12 months;

then the vessel is considered lost, and the assured is entitled to claim compensation for the loss of the assured object. If the vessel has not had cargo on board, whereby it can be presumed to be able to float, when full of water, and on account of damage, has been deserted by the crew, the above fixed periods of time will be shortened by one-half.

The time for sailing, as well as the non-arrival of the vessel at its destination, to be legitimatised by attestation from the respective funtionaries in the ports of departure and of destination.

In cases of embargo or seizure, the assured may require the payment of the assurance sum, when he has been thereby deprived of disposal over the assured object longer than three months, on making over to the underwriter the title of possession to the objects.

The duty of the assured in cases of accident, to give the underwriter notice, &c. The underwriter's right to make salvage himself, and to have the property made over to him.

68. About all accidents the underwriter or his nearest agent shall be informed as soon as possible, and when this can be done without injury, their acting orders shall be requested, from which there must be no deviation, unless it can be proved that there were good grounds for so doing. Likewise shall the underwriter, or his agent, if possible, receive notice as to when the sea protest and survey is to be made, and when it can be done, be consulted concerning all matters of importance which may concern them.

If the underwriter, at his own expense and responsibility, will undertake the salvage of a completely assured object, the assured cannot refuse, in which case, however, the assurance amount must be paid, should the salvage not be completed within three months from the time that the accident was announced to the underwriter.

When, in accordance with the wish of the assured, the amount of insurance has been decided for payment, the underwriter is also entitled, immediately or later, to demand the right to the assured objects being transferred to him; this and the foregoing provi-

sion

sion, will be applicable upon the assurance, even if the imaginary profit, freight, duty, and expenses at the place of destination be not assured in conjunction with the same.

By a freight assurance it will devolve upon the assured in case of the vessel's loss, if possible, to endeavour to diminish the loss by making use of his right to demand distance freight, or transport the goods further in another vessel. On the whole, it is incumbent upon the assured, in cases of accident, to work in the interest of the underwriter as though it were his own.

The redress which the assured has, for loss which he has sustained by the fault of others.

69. Should the damage, which has occurred to the assured object, have been caused by the fault of others, the assured, or the person who acts on his behalf, before any compensation can be claimed, shall do everything possible, by amicable arrangement, or by recourse to the law, to get the damage compensated by the offending party, unless the underwriter will undertake the case himself, which he is in such matters entitled to do, and the assured is bound to agree to the case being entered in his name, and to assist in producing every necessary proof. The total net amount of the compensation, which is thus made good, for damage done to the insured object will be deducted from the assurance compensation.

Should not the whole of the object which has been so injured be assured, the owner can be freed from participation, for the unassured portion, in the expenses of the lawsuit, should this be lost, on his previously declaring his unwillingness thereto; but should it be gained, and he thereafter, by amicable arrangement, or by a new lawsuit, gain compensation for his loss, he shall fairly contribute to the expenses of the first lawsuit according to the benefit which he may be judged to have had therefrom, even though settlement with the underwriter may already have taken place.

Damage done to others by an insured vessel.

Should compensation be claimed from an insured vessel for damage it has done to another vessel or goods, the underwriter must, in every case, be freed from participation in the law expenses, when he previously declares that the claim should be paid without going to law.

The duty of the assured to have the average expenses assured.

70. For the risk, during the remainder of the voyage, the assured shall assure such average expenses for which compensation has not yet been made, and which, should the object afterwards be lost, might be an occasion of the loss becoming greater than the assured sum. Such assurance, as far as concern the separate expenses respecting the assured object, should however not take place before having obtained the decision of the underwriter, if there be time and opportunity thereto.

Loss from receiving irrecoverable bills.

71. When an accident happens, in which the underwriter's risk is concerned, he is also answerable for the loss resulting from the assured getting irrecoverable paper in payment of the freight, or for the proceeds of the assured objects, or that the proceeds thereof be lost in any other manner, when it may be presumed, in consequence of the accident, to have been difficult for the assured or his agent to secure himself therefrom. In other cases such losses do not concern the underwriter.

Interest on compensation.

72. Beyond the interest upon outlay, which the average commissioner charges, during the continuance of average, interest only will be compensated, provided, in the case of a vessel with a cargo on board, the interest is charged as general average, or, that from the time the assured object is sold or condemned, or in other cases, from the time the assured has laid out average expenses, there elapses a longer time than six months before the compensation is paid, in which case lawful interest will be reckoned after the expiration of the named six months.

The assured himself will not be paid any commission.

The assured will not be compensated for what he may have charged for his trouble; this provision, however, has no influence upon monthly wages, which a captain, who is the owner of the vessel, may have a right to have compensated.

Liability when the assured object is sold for bottomry, &c.

73. When the assured suffers loss, by his property being liable, jointly with other objects, bottomried on account of accidents under the risk, this becomes an object for compensation, but otherwise it does not concern the underwriter, that the pledge or bottomry creditor retain his hold upon the assured object, nor that the crew make use of their priority of claim upon the assured vessel for wages due.

Re-purchase when the assured object has been sold for salvage and similar expenses.

74. When in consequence of salvage remuneration, liabilty for damage from collision, or similar circumstances, it is considered necessary or advantageous to sell the assured object, without the assured being entitled to make such a sale (*see* Article 47), he cannot refuse to retake the object, should the underwriter purchase at such a sale and thereupon deliver it over to him.

How far compensation is limited by the assurance sum.

75. For a single case of accident, the assurance sum is the largest amount that compensation can be claimed for; though, in addition thereto, will be compensated, the expenses of endeavouring to get the loss refunded by others, who are supposed to have caused the same, where there was good reason to do so, or if it be done with the underwriter's sanction, also the expenses of appropriate attempts of rescue, when any of these expenses have been the occasion of the loss becoming greater than the assurance sum.

Should several accidents occur during one voyage, greater compensation than the assured amount can likewise be claimed, upon proof from the assured that it has been impossible for him to get assured the expenses in the foregoing averages, (*see* Article 70).

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When an assurance is effected for several voyages, or for time, the underwriter is, in every case, during each single voyage, liable for the whole assured sum, as for a separate assurance.

The right of the underwriter to declare himself free from further risk by the payment of the assurance sum.

76. The underwriter, in cases of accident, is always entitled to free himself from further liability resulting from the assurance, by giving a declaration hereupon, within three days after the assured has informed him of the accident, and the other particulars with which he was acquainted, on the underwriter paying the full assurance sum, together with all the expenses, which, previous to his declaration, had been employed for the rescue and preservation of the assured object. Upon such payment the underwriter has, however, no right to the assured object (*see* Article 68).

Should, at the time that the accident happened, a portion of the assured objects have already been outside the danger undertaken by the underwriter, he shall, by making use of his rights, according to this article, be freed from paying the part of the assurance sum falling upon that portion.

Repayment of compensation which is covered by bottomry which is not redeemed, or by assurance.

77. If compensation be allowed for average expenses, which are paid by bottomry loan, or which are assured, and a fresh accident happens, the consequence of which is that the bottomry creditor, or the underwriter upon average money, will have to bear a portion, or the whole of the expenses, which are compensated, then the amount which the assured by these means get doubly paid, shall by him be repaid the original underwriter.

Limitation of the binding power of the policy valuation.

78. The amount stipulated in a valued policy is not binding for the underwriter, in cases of compensation, when he proves that it is stipulated more than 10 per cent. too high or too low; the valuation is, however, binding when it is either fixed by the underwriter himself, or based upon an estimation which he has sanctioned.

The valuation of freight has validity only when the amount of the freight has not been stipulated. If at the time when the vessel was assured it had metal sheathing which afterwards has been stripped off, the value of the sheathing, at the time of assuring, will, in case of loss, be deducted in the assurance value of the vessel.

Minimum of loss for which compensation can be claimed.

79. That claim may be made for compensation of damage or loss of assured goods; the damage or loss, estimated in accordance with Articles 54 and 55, must in every case amount to more than 3 per cent. of the assurance value (*see* Article 56).

In ship assurance, the duty of making compensation arises, when the gross amount of the damage, which is entitled to be compensated, together with the particular expenses which fall upon the underwriter, amount to more than one specie dollar per "Kommercelæst" of its registered tonnage. In all other cases, the loss and expenses, which, on the whole, have to be made good without addition of the expenses of the average statement, must make 3 per cent. of the assurance sum, to be able to be claimed; though this rule will not be applied to goods when loss or damage of the same is an object for compensation. Whereas without regard to the amount of the sum, will also be compensated general average, as well as other expenses, whereby a loss has been so prevented or diminished, that, in consequence thereof, it does not reach the fixed minimum.

Compensation by portion assurance.

80. Should the object stated in the policy not be assured for its full value, compensation to be computed in proportion to the assured portion thereof.

Proof of loss. Statement of average.

81. When the assured will claim compensation, it is incumbent upon him, by extended sea protest, survey, receipted bills or other necessary documents, to prove the damage he has suffered, and to send the documents to the underwriter, who, within three weeks from the time he has received them, must send them to an average stater (Dispacheur) to have the compensation calculated, or, should this not be done, he must himself give a decision of the compensation, within a period of six weeks.

Should lawful average statement be made out, the compensation must be decided within 14 days from the time of the receipt of the statement.

So long as an offer of compensation has not been accepted, in its entirety, by the assured, it is not binding upon the underwriter for any portion. Nor shall it be considered as the acceptation of any compensation liability on the part of the underwriter, that he has given or refused his consent to the sale of the assured object, or, on the whole, acted or made arrangements, to which this plan gives him a right.

In cases of lawsuit, when any calculation is required for the decision of compensation, the person concerned shall produce a lawful average statement for what the compensation would be, if his demand had been allowed by the court. Should the court make alterations in this statement, no new one will however be necessary.

Payment of compensation, and reduction of foreign coin.

82. Compensation is due for payment three months from the time that it is decided, or from the time, which according to Article 81, this should take place.

Outlay in foreign coin is reduced according to the exchange at the time the outlay was made, or, if this is not stated, or by the underwriter not required, according to the exchange at the time when the compensation was computed.

On paying the compensation, the underwriter can require the policy to be surrendered, if it be run out, or else that, besides giving a separate receipt, the policy also be indorsed for the payment.

Prescription, or loss of right to claim compensation.

83. The right to compensation for damage will be considered lost when the assured, within a month from the time that he became acquainted with the accident has not announced

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announced the same to the underwriter; also when, within two years from the same date, he does not make a claim for compensation; he, however, retains his right even beyond these periods when he can prove that it has been impossible for him, within the time, to make a declaration of the accident, or produce the requisite proofs.

When an assured vessel strikes, and, with the knowledge and will of the owner, but not with the sanction of the underwriter, sails further, without the bottom being examined as soon as it can be done, and the probable damage repaired, the right of afterwards claiming compensation for such an accident is considered as having been relinquished. This provision will not, however, be applied when further sailing without repairs, on account of the circumstances, may be considered justifiable or suitable, and, besides, when the underwriter is immediately informed of the occurrence.

The underwriter's position, on the transfer of the policy to a third person.

84. So long as the underwriter is not informed that the transfer or pledging of the policy has taken place, he has a right to pay compensation, and advance thereupon, without showing or indorsing the policy, and can likewise, also by compensations payable at a later date, liquidate every earlier claim on the assured for premium or anything else. Also when the policy's transfer or pledging is announced to the underwriter, he can pay compensation, or advance thereupon, direct to the original assured, for covering the expenses which are a consequence of the accident, and concern the assured object.

The foregoing General Norwegian Marine Assurance Plan, the original draught of which was made by Mr. J. Aall Moller, at the request of the Committee of Management of the "Norske Veritas," is in accordance with the decisions come to at a general meeting of the above committee in Christiania from the 12th to the 14th October 1871, who requested their undersigned chairman to undertake the publication of the same.

Smith Petersen.

Grimstad, 23 October 1871.

— No. 6. —

DENMARK.

Denmark.

(M. 7618.)

Mr. Pakenham to the Earl of Derby.

My Lord, Copenhagen, 14 May 1875.

With reference to your Lordship's despatch of this series, No. 4, of the 13th March, on the subject of the law of marine insurance in Denmark, I have now the honour to inclose copy of the reply of Baron Rosenörn Lehn to a note which Sir Charles Wyke addressed to him on the 23rd of March, and from which it will be seen that the labours of the Committee having charge of this matter are not yet sufficiently advanced to enable them to present a Report.

I have, &c.
(signed) *J. Pakenham.*

Right Honourable the Earl of Derby,
&c. &c. &c.

Monsieur, Copenhague, le 13 Mai 1875.

En réponse à la lettre que Sir Charles Lennox Wyke a bien voulu m'adresser, le 23 Mars dernier, relativement à la commission chargé de la révision de notre législation maritime, j'ai l'honneur de vous informer que suivant les renseignements qui m'ont été transmis par le Ministère de la Justice, les travaux de cette commission ne sont pas encore assez avancés pour qu'on puisse fixer l'époque à la quelle paraîtra son rapport.

J'ai, &c.
(signé) *Rosenörn Lehn.*

M. Pakenham,
&c. &c. &c.

— No. 7. —

HOLLAND.

(M 8029.)

Holland.

(Translation.)

Answers to Questions.

1. This question is answered in the affirmative, according to Art. 246 of the Commercial Code, which runs as follows :—

> " Insurance is an agreement or contract by which the person undertaking the insurance binds himself to the person effecting the insurance, in return for a premium, to hold him harmless against a loss, damage, or disappointment in profit expected, which the latter might, by an uncertain event, sustain."

2. Insurance for an amount exceeding the value or real interest at stake, is recoverable only for the value or real interest, irrespective of the question whether the person effecting the insurance was aware of the excess or not. (Art. 253, Paragraph 1, Commercial Code.)

3. Compensation to a larger amount cannot, as already appears from the answer to the preceding question in this case, be demanded.

4. By virtue of Art. 592, Commercial Code, on insuring a vessel, the policy must indicate the value.

5 and 6. Art. 619, Commercial Code, gives the following directions on this subject :—

> " The full value of the hull of a vessel being insured, it may, although previously taxed, be again confirmed or reduced by a legal decision, after report, when required, of experts—
>
> " 1. If the vessel is taxed in the policy according to the price for which it was sold or what it cost to build it, and when, either through old age or on account of having made several voyages, it is already reduced in value.
>
> " 2. If the vessel being insured for several voyages, after having completed one or more, and having from this source earned freightage, is afterwards lost on one of the insured voyages."

7. No. The being condemned in the costs of the suit, is the only consequence of its rejection.

8. The answer to this question is contained in the following provision of the Code :—

> Art. 699, Commercial Code : " Ordinary damages or charges are :—
>
> " 9. The wages and keep of the crew during the time which the vessel has been compelled to stop in a harbour of refuge.
>
> " 10. The pilot charges and other harbour dues, which must be paid for entering and leaving a harbour of refuge.
>
> " 15. The damage to the vessel or cargo, or to both, caused when the vessel, to escape danger of capture or being lost, is purposely run ashore, as also when the same thing has been done in any other pressing danger, to save the vessel and cargo.
>
> " 16. The expenses and payments for assistance rendered in the preceding case, to get the stranded vessel afloat again, and all payments for extra services incurred in preventing the loss or capture of the vessel."
>
> Art. 701. " Extraordinary or special damages are :—1. All injuries and losses happening to the vessel or cargo by storm, capture, shipwreck, or accidental running ashore.
>
> " 2. Charges for storing or warehousing, and the expenses therewith connected.
>
> " 3. Loss

"3. Loss and injury or damage to cables, anchors, ropes, sails, bowsprit, topmasts, yards, boats and tackle, occasioned by storm or other disaster at sea."

9. An answer in the affirmative, results from Art 593, Commercial Code.

10. On this point, the Commercial Code decides as follows, Art. 615:— "Insurance on anticipated profit must be separately calculated in the policy, with a special declaration to what merchandise it applies; in the absence of this, the insurance is void.

"If the value of what is insured is expressed in general, with a positive condition that all above the value of the merchandise shall be regarded as anticipated profit, the insurance holds good for the value of the articles insured; but the excess shall be reduced to the proved amount of the anticipated profit, calculated according to the scale named in Arts. 621, 622."

Art. 621. "Anticipated profit shall be proved by recognised price currents, or in their absence by the estimate of experts, from which shall be shown the profit which the insured merchandise on safe arrival after an ordinary voyage at the destined port would, on a fair calculation, have brought."

Art. 622. "If from the price currents or from the estimate of experts, it shall appear that on safe arrival the profit would have amounted to less than the sum which the insurer had indicated in the policy, the person undertaking the insurance, is required to pay only the smaller amount. He is not liable at all if the articles insured would have sold at no profit whatever."

Art. 623. "The amount of freight is shown by the charter party or ship's papers or if merchandise is in question belonging to the owners themselves, the amount of freight shall be estimated by experts."

11. From Arts. 616 and 617 of the Commercial Code, the answer is in the sense last mentioned.

12 and 13. The law contains, with reference to these points, no other directions than Art. 617, Commercial Code, which runs as follows:—

"When a vessel is lost or has been run ashore, the insurance shall be diminished or reduced by the amount which the captain or owner of the vessel is not liable for in consequence of the disaster, in the way of wages or pay to the crew, and other expenses which would have had to be paid on safe arrival."

14. This question is answered in the affirmative by Art. 482, paragraph 2, Commercial Code, by virtue of which direction the contrary stipulation is nevertheless permitted.

15. The Commercial Code decides upon this point as follows:—

"Art. 612. Merchandise may be insured for the full value which it possesses at the time and place of its being sent, with all expenses, till it is on board, the premium of insurance included, without a separate estimate of every article being required.

"Art. 620. If the insurance is effected for the return voyage from a country in which trade was carried on only in the way of barter, the estimate of the value of the merchandise insured shall be made on the basis of what the merchandise bartered has cost, with the addition of the transport expenses." This applies whether or not the estimate was made in the policy. "Moreover, the actual value of the merchandise insured, if expressly mentioned in the policy, may be augmented with the freight, import duties, and other expenses, which, on safe arrival, must of necessity be paid." (Art. 613.)

This last addition is not binding, however, "if what is insured does not arrive at the port of destination, as far as the payment of freight, import duties, and other expenses, wholly or in part, does not take place." (Art. 614.)

16. The person effecting the insurance cannot claim more than what is comprised in the preceding.

17. By a legal decision adverse to the claim of the person insured, as far as this exceeds the amount set down in No. 15.

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18. Yes. By virtue of Art. 249, Commercial Code, that for insurance in general, and therefore also for insurance at sea, the person undertaking the insurance is never liable "for damage or loss immediately arising from any defect in what is insured, unless that defect is expressly insured for."

The applicability of the principle to insurance at sea results also from Art. 637 treating of insurance against disasters at sea, which Article, rehearsing the dangers for which the person undertaking the insurance is liable, does not contain damage arising from the vessel's own defects.

19. Yes.

20 and 21. On this point there are no special injunctions in the Commercial Code.

22. A negative answer results from the word "immediately," which occurs in 18 as far as concerns the question there treated of. (*See* Art. 249, Commercial Code.)

23. Non-compliance with conditions according to Art. 638, Commercial Code, nullifies at all times the obligation of the person undertaking the insurance.

24. Disputes between insurers and insured come under the jurisdiction of the ordinary civil courts, *i.e.*, law officers, without "mercantile or nautical assessors." In former times arbitration was much resorted to for the settlement of such disputes, but it is not so much employed at present, from which it may be inferred that in general there is no dissatisfaction with the decisions of the Court on these subjects.

La Haye, le 21 Mai 1875.

— No. 8. —

BELGIUM.

Belgium.

(M. 329.)

ANSWERS TO QUESTIONS.

1. En droit le contrat d'assurance ne peut, pas plus en Belgique qu'en France, constituer une source de profit pour l'assuré. L'assurance ne peut servir qu'à *garantir l'assuré d'une perte éventuelle.*

Le principe élémentaire de droit sous le Code Français de 1807 (Code de Commerce), qui régit encore *en partie* la Belgique,* est au reste reconnu par l'article 1^er^ de la Loi Belge du 11 Juin 1874. Cet article porte: "L'assurance est un "contrat par lequel l'assureur s'oblige, moyennant une prime, à indemniser "l'assuré des pertes ou dommages qu'éprouverait celui-ci par suite de certains "événements fortuits ou de force majeure.

"Le profit espéré peut être assuré dans les cas prévus par la loi."

2. Cette question telle qu'elle est posée implique la connaissance de la part de l'assuré qu'il *savait* qu'il assurait plus que la valeur réelle des objets assurés. C'est alors l'équivalent du dol et de la mauvaise foi. Dans ce cas le contrat est nul pour l'assuré, mais non pas pour l'assureur.

Art. 336 du Code de Commerce; 348, 357, 358 même Code.—Art. 9, 10, et 11 de la Loi Belge du 11 Juin 1874, sur les assurances, mais qui n'est pas encore discutée et promulguée en ce qui concerne spécialement les *assurances maritimes.*

3. Au point de vue de la validité du contrat, il importe peu que l'assuré ait connu ou non qu'il a assuré plus que la valeur réelle. Le principe reste le même. L'assurance ne peut être une source de bénéfice; l'excédant ne sera pas couvert; seulement si c'est *sciemment et frauduleusement* que l'assuré a déclaré une valeur fausse, le contrat sera annulé quant à lui; si c'est *involontairement, par*

* Voir à ce sujet Boulay-Paty, Cours de Droit Maritime, t. 2, p. 128. Voir aussi l'Ordonnance de Louis XIV., de 1681, base du Code de Commerce de 1807 en France.

par simple ignorance, l'assurance subira seulement une réduction. (Art. 357, 358 Code de Commerce.)

4. Si l'on assure un navire pour une somme déterminée, c'est à sa valeur au moment de l'assurance qu'il faut se rapporter. C'est à ce moment que l'aliment est sérieux et constant. L'assuré propriétaire du navire a bien réellement une valeur équivalente au navire à ce moment. Il n'y a pas lieu de faire entrer en ligne de compte les frais d'entretien et autres, ou les modifications qui y sont survenues depuis ; en un mot, c'est au moment du contrat qu'il faut se rapporter.

En ce qui concerne le navire lui même, c'est le navire grée que l'on entend par là, à moins que le contrat ne s'en explique autrement.

5. Si dans la police (c'est-à dire, le contrat même d'assurance) le navire ou l'aliment couvert par l'assurance est évalué *de gré à gré*, c'est-à-dire, de commun accord contre assureur et assuré ; s'il est même ajouté, comme cela a souvent lieu dans la pratique, "*qu'il ne faut pas d'autre preuve de valeur que la production de la présente police*," l'assureur n'en conserve pas moins, en vertu des règles enoncées plus haut, le droit d'exiger une réduction, s'il est établi que la somme assurée excède la valeur de l'aliment (objet assuré). C'est une règle que les tribunaux appliquent toujours. (*Voir*, par exemple, Jugement arbitral d'Anvers du 2 Mars 1871, rapporté dans la Jurisprudence du Port d'Anvers, année 1871, p. 62.)

Lors même que l'évaluation aurait été faite *de gré à gré*, et qu'il aurait été stipulé dans le contrat *qu'il ne pourra être exigé d'autre preuve d'intérêt que l'assurance même*, alors encore les assureurs doivent être admis à prouver par toutes les voies du droit, par témoins, par experts, par le serment à faire prêter par l'assuré, par son interrogatoire, &c., &c., que l'évaluation est exagérée ou qu'elle couvre un aliment prohibé par la loi. (*Voir* Anvers, Jugement arbitral du 23 Mars 1871 ; Jurispr., Port d'Anvers, 1871, p. 59 ; idem, Emérigon, ch. xi., s. viii. ; idem, Boulay-Paty sur Emérigon, t. 2, p. 340 ; idem, Alauset, Traité des Assurances, t. 2, N° 280.)

6. La réponse à la Question 5 suffit et sert de solution à celle-ci.

7. Tout d'abord lorsque l'assureur n'apporte pas au procès, un fait plus ou moins de nature à faire supposer qu'il pourrait y avoir erreur dans l'évaluation de l'aliment, il verra sa demande écartée ; si elle est accueillie d'abord, et qu'il perde son procès, il aura à en payer les frais. Si c'est mauvaise foi et sciemment que l'assureur à intenté un procès injuste, il peut en outre être condamné à des dommages-intérêts.

8. L'assurance du corps du navire, et l'assurance des gages et victuailles sont des assurances distinctes, ayant des aliments différents. L'assurer du corps du navire, ne peut évidemment avoir à payer les gages et les frais pendant le temps de la relache ; la débition de ceux-ci incombe à l'assureur de ces objets, ou à l'armement s'il est resté, quant à ces objets, son propre assureur.

L'assureur du *corps de navires* peut cependant dans une circonstance avoir à payer les gages des gens de l'équipage, et les frais et dépenses pendant le voyage, c'est dans le cas exceptionnel de l'Article 386 du Code de Commerce de 1807 ; lorsque devenu propriétaire du frêt, par suite du *délaissement* du corps de navire (Articles 369 et suivant du Code de Commerce), il doit de ce frêt d'abord acquitter certaines dettes spéciales, parmi lesquelles les gages des marins (et *voir* l'Article 386, Code de Commerce).

Pour completer la réponse à cette question, il ne faut pas perdre de vue qu'il est encore *quelques cas exceptionnels, tout particuliers*, dans lesquels cependant l'assureur du corps du navire peut avoir certaine responsabilité. (*Voir* à ce sujet les Arts. 400 à 404 du Code de Commerce. *Voir* aussi Répert. de Dalloz, Droit Maritime, N° 1144.)

9. Sous l'empire du Code de Commerce français de 1807, *l'assurance du frêt* est prohibée ; c'est là une règle écrite dans l'Article 347 du Code de Commerce, et consacrée par la jurisprudence des cours et des tribunaux. Elle a sa source dans l'ordonnance de 1681. Toutefois même sous l'empire du Code français la doctrine des auteurs *fait une distinction*. Elle soutient que l'Art. 347 ne s'applique pas au frêt *acquis*, tel par exemple qu'il l'est dans le cas de l'Art. 302 du Code de Commerce. Qu'ici il existe un aliment certain qui peut faire

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l'objet d'une assurance; que l'Art. 347 ne prohibe que le *frêt à faire*, parce que dans ce dernier cas l'assurance tombant sur une chose future, incertaine, peut dégénérer en *gageure*, ce que le Code français a eu avant tout en vue de proscrire.

Aujourd'hui la Belgique a fait une loi nouvelle, celle du 11 Juin 1874. Elle traite *des assurances*. Toutfois elle ne comprend que trois articles généraux qui se rapportent aux *assurances maritimes*, comme à toute autre espèce d'assurance; ce sont les Art. 1er, 2e, et 3e, du chap. 1er de cette loi. Le restant de cette loi est consacré *uniquement aux assurances terrestres*.

Quant à la loi sur les *assurances maritimes* proprement dites, elle n'est encore qu'en projet; celui-ci sera discuté *prochainement* par les chambres, puis promulgué comme loi par le Roi.

Nous pouvons dire qu'il résulte dès à présent de l'Art. 1er de la loi du 11 Juin 1874, combiné avec l'Art. 3, qu'il est *probable* que l'Art. 347 du Code français sera aboli en Belgique, puis que l'Art. 1er dit que "*le profit espéré peut être assuré dans les cas prévus par la loi.*" Mais au point de vue du droit strict, et par suite des principes généraux en matière d'abrogation des lois, nous croyons, cependant, qu'en ce moment* la Belgique se trouve encore sous la prohibition reprise à l'Art. 347 du Code de Commerce.

10. Dans l'hypothèse de la loi nouvelle probable,† nous répondons que le montant du fret peut être évalué dans la police; mais que s'il est estimé à un taux exagéré, la réduction peut en être exigée, comme il a été dit plus haut. C'est là au surplus l'application des principes généraux résultant du Code de Commerce de 1807 sur les assurances maritimes, appliqués par la Belgique, dans la loi récente du 11 Juin 1874 sur les assurances terrestres.

11. Dans l'hypothèse de l'abolition de l'Art. 347 du Code, nous répondons que rien ne s'oppose à ce qu'on assure le frêt *brut*, la somme que l'assuré eut reçue ou recueillie à l'arrivée du navire au port.

12. Sous la réserve que dessus, l'assuré a droit au remboursement du frêt brut; c'est un aliment sérieux et réel.

13. Avec même réserve nous disons qu'il n'y a pas de déductions à faire, si le frêt brut est assuré, c'est le montant du frêt brut qui est dû.

14. L'Art. 302 du Code de Commerce de 1807 répond à la question. Si le navire fait naufrage, il n'est par dû de frêt pour les marchandises perdues. Le frêt payé d'avance doit être restitué, *à moins de convention contraire*.

Si cependant une partie des marchandises est sauvée, et que le navire périt ou devient innavigable en cours de voyage, le propriétaire des marchandises *doit le frêt de distance*, c'est-à-dire, le frêt proportionnel à la distance parcourue.

15. L'Art. 339 du Code de Commerce répond à cette question: "Si la valeur "des marchandises n'est point fixée par le contrat, elle peut être justifiée par les "factures ou par les livres; à défaut, l'estimation en est faite suivant le prix "courant au temps et au lieu du chargement, y compris tous les droits payés et les frais faits jusqu'à bord."

Cette estimation se fait alors par les moyens de preuve ordinaires, *par témoins et par experts* &c., &c.

16. Sauf l'assurance du bénéfice espéré qui est d'usage, si l'estimation des marchandises était exagérée, il y aurait lieu à réduction, comme nous l'avons dit, pour l'assurance sur corps du navire, mais s'il y a dol ou fraude de la part de l'assuré, tout le contrat d'assurance est nul, *en ce qui concerne l'assuré*, mais non pas en ce qui concerne l'intérêt de *l'assureur*, ainsi que nous l'avons déjà expliqué plus haut.

17. Tous les moyens de droit sont réservés à l'assureur pour faire la preuve de l'exagération, et échapper ainsi à l'obligation de payer l'excédant.

18. Le

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* Confirmés par le rapport de la Loi de 1874, sur les assurances, et la discussion de l'Art. 1er de cette loi, qui disent clairement que le *profit espéré* ne fera l'objet d'un contrat d'assurance que dans les cas et sous les conditions à régler ultérieurement par le Législateur.

† *Nota bene.*— Nous disons *probable*, parce que les rapports aux chambres sur le projet de *loi des assurances* en Belgique et les discussions dès 1873 sur l'Art. 1er de la loi du 11 Juin 1874 précitée prouvent qu'on s'est inspiré en Belgique de la Loi hollandaise sur les assurances maritimes, qui permit l'assurance du frêt et d'un bénéfice espéré, sous les conditions déterminés par le Législateur hollandais.

18. Le capitaine ou l'armateur a pour premier devoir de ne commencer le voyage qu'avec un navire en bon état de navigabilité. L'Art. 225 du Code de Commerce relatif à la visite est une considération, une mise en pratique de ce principe.

Si la chose périt par *vice propre* l'assureur n'est pas tenu. (Art. 352, Code de Commerce.)

19. Il faut que le navire soit en bon état de navigabilité, c'est-à-dire, capable de tenir la mer et d'effectuer le voyage pour lequel il est engagé. C'est une question de fait et d'appréciation des experts commis à la visite.

20. L'Art. 225 du Code de Commerce exige que le capitaine fasse visiter son navire avant de prendre charge. (*Voir* Rep. de Dalloz, Verbo., *Droit Maritime*, N^os^ 382 à 390.)

21. Pour la réponse à cette question, *voir* la réponse précédente.

22. Le défaut de visite du navire établit une présomption d'innavigabilité. (Dalloz, *ut supra*, N° 391.)

Supposons l'innavigabilité ainsi *présumée*, ou bien *établie*, s'il est *prouvé* que la perte ne provient pas du mauvais état de navigabilité du navire, mais bien d'une fortune de mer.

Pour résoudre cette question, il faut distinguer, croyons nous :

Si l'assuré a *connu* le mauvais état du navire et n'en a rien déclare à l'assureur, il commet une réticence doleuse qui *annulle* l'assurance d'une manière absolue, et alors même que la chose viendrait à périr par cas fortuit. (Art. 348, Code de Commerce.)

Mais s'il n'y a pas eu de réticence, si l'assuré n'a rien caché à l'assureur, ou n'a pas connu le mauvais état du navire, l'assureur sera tenu, si la perte provient non du fait de l'assuré (Art. 351 du Code de Commerce), c'est-à-dire, du mauvais état du navire, mais d'un événement fortuit, prévu en l'Art. 350 du Code de Commerce et étranger à l'état défectueux du navire.

23. Aux termes des Art. 351 et 364 du Code de Commerce, tout changement de route ou de voyage ne sont pas à la charge des assureurs ; et l'assureur est déchargé des risques ; la prime lui est acquise, si l'assuré envoie le navire à un lieu plus éloigné que celui qui est désigné par le contrat.

24. Toutes les contestations en matière d'assurances maritimes sont de la compétence du tribunal de commerce, à moins de dérogation conventionnelle ; ce qui se fait très-fréquemment en Belgique, où les parties conviennent souvent de soumettre le litige futur à deux ou trois personnes privés que l'on appelle *Arbitres*.

En cette matière l'on recourt souvent à des *arbitres*, parce que l'on peut de cette manière soumettre le procès qui exige souvent des connaissances spéciales, techniques, à des capacités, à des spécialités ; les tribunaux de commerce, qui se composent d'un magistrat président et de deux juges, tous les trois commerçants, assistés d'un greffier qui est généralement un docteur en droit, chargé de la rédaction, fonctionnent généralement bien ; mais leur composition même offre certain danger pour les justiciables, lorsqu'il s'agit d'un procès dont la bonne solution exige de la part de ceux qui sont appelés à les juger, des connaissances particulières, par exemple, lorsqu'il s'agit de choses maritimes, &c., &c.

Les président et juges des tribunaux de commerce de Belgique sont nommés par le Roi, sur le choix qui en est fait par certaine catégorie de citoyens. Ils sont choisis parmi les notables du commerce, lesquels les élisent en assemblée officielle. Ces notables se composant de personnes s'occupant des mille variétés du commerce, parfaitement honorables au reste, or il peut se présenter que tout le tribunal de commerce ou *presque tout* le tribunal de commerce d'une ville, soit à un moment donné composé de personnes entièrement étrangères aux choses maritimes ou autres qu'il s'agit de juger.

En pareil cas ce tribunal est alors obligé de consulter officieusement d'autres personnes, ce qui présente un grave danger.

D'un autre côté les juges qui connaissent en degré d'appel des décisions des arbitres et des jugements des tribunaux de commerce, sont les cours d'appel, qui sont en Belgique au nombre de trois. Elles sont composées de magistrats instruits et expérimentés en général ; mais tous sont des docteurs en droit, et la nature même de leurs études ne leur a pas permis de se familiariser avec des matières spéciales, surtout avec la partie maritime. Cette organisation offre ici

Belgium.

de nouveau un danger pour certains procès, c'est-à-dire, les procès ayant trait à des choses exceptionnelles, telles ue les assurances maritimes, les contrats à la grosse, les avaries, &c., &c.

Il serait à souhaiter, suivant nous, que pour la bonne justice, il y eût en Belgique comme jadis, surtout en France, des tribunaux spéciaux, des tribunaux maritimes. Mais je doute qu'en présence de la loi constitutionelle de Belgique ce vœu puisse se réaliser.

Fait à Bruxelles, le 6 Mars 1875.

(signé) *Wenseleers,*
Avocat à la Cour d'Appel de Bruxelles.

— No. 9. —

ITALY.

Italy.

(M. 4755.)

(Translation.)

REPLIES to QUESTIONS concerning the LAWS of FOREIGN COUNTRIES respecting MARINE INSURANCE.

1. IN former times *proper* insurance and *improper* insurance were recognised. The first was to fall upon real and existing values ; as regards the second there was no obligation to prove the value of the thing insured—it was a wager ; but since the end of the last century, the principle has prevailed that insurance ought not to be a game, but the strict indemnity of the real value lost, exclusive even of the hoped-for profit, and this is the principle which governs the terms of our Commercial Code.

2. In the supposed case, and according to our Commercial Code, the insurance would be null, and the insurer would even be exposed to penalties. (*See* Art. 450 and 462 of the Commercial Code.)

3. If the value of the merchandise is inferior to the sum in which they were insured, I think that the insurer would have the right of reducing it to its true value. In some countries, and especially in Germany, it is held that when the price of the policy is accepted by the insured, which is usually expressed by the clause "vaglia o non vaglia," the insurer is obliged to pay the whole of the declared value, and has a right to the estimation or proof of the real value only in the case of his not having accepted the declared value. As I hold that the principle is just that insurance should not be a source of profit, I consider that the law ought to nullify the insurance on account of a false declaration made with a fraudulent intention, and to declare that the indemnity should be reducible to its true amount when the false declaration is made without fraud. Too great liberty in declaring and accepting the value declared makes the contract of insurance incline to gambling.

4. If the value is not fixed at the time of insurance, the value at the port of departure is calculated. I think that it ought to include the expenses mentioned in the question, because they form a real outlay on the part of the owner (*see* Art. 453 of the Commercial Code). Deductions for wear and tear should necessarily be made if it is customary to do so. It is to be observed that our Code lays down precisely the mode of fixing the value, because it admits of the proof of what the insured has paid for the object subject to insurance ; now in this mode of establishing the value, all deductions for use should be made. (*See* Art. cit.)

5. The insured can only recover the real value for the things mentioned in Nos. 1 and 4.

6. According to the Italian Code the insurer may contest the truth of the declared value, and the proof would in great part rest with the insured, that is, he should be able to prove in some way not only the value of the objects, but also that they were shipped. The importance of this obligation is easily understood when it is considered that the insurance is rarely made in the place where the

the goods are shipped, but more frequently in a distant country. For example, if an insurance is made in London on account of a cargo of corn which has to go from Odessa to Marseilles, how can the insurers in London know whether the corn has really been shipped, and whether it is of good or bad quality; hence the necessity that the insured should afford proof of the reality and importance of the risk. He is alone to assert that he has shipped corn in such quantity and quality; he ought therefore, when he wishes to recover the value, to prove the truth of his assertions.

7. The clause might be the ancient formula "*costi o non costi*," but if it were rigorously observed it would always make room for exaggeration of value, and the principles which govern the contract would be easily broken, viz., what was indicated in No. 1, and the consequent application to estimation of value which must be determined in the port of departure in order to exclude the eventual profits of the expedition.

8. The insured may demand the expenses here mentioned which are classed as general average as settled by Art. 509, No. 9, and following, of the Commercial Code.

9–13. Freights and profits cannot be insured, and by doing so the insurance would be null (Art. 461 of the Commercial Code). It is a consequence of the principle established in No. 1.

14. In case of shipwreck the freight paid should be returned (Art. 409 of the Commercial Code).

15, 16, and 17. *See* Question 4.

18. It is a rigorous condition that the ship should be adapted to navigation, insomuch that it is the duty of the captain to have it inspected before departure (*see* Art. 322 of the Commercial Code; Arts. 77, 78, and 79 of the Code for the Mercantile Marine.) But the question of unseaworthiness cannot be adduced, I think, except when it is absolute, that is, when it has been proved that the ship could not keep the sea when it started. With respect to the relative goodness of the ship, it is calculated in the insurance, and the insurers charge various premiums, according to the class in which the ship has in the "Veritas."

19. Insurances may be made by time or by the voyage. The statement of seaworthiness is common to the two modes.

20. *See* observations to Question 18.

21. The unseaworthiness referred to must be borne by the insurers, who also pay, as losses, the expenses of repairs (*see* Art. 506 and following of the Commercial Code.)

22. When it is proved that at the time of departure the ship was not in a state to go to sea, I think the insurers would be free according to Art. 462 of the Commercial Code.

23. A change in the course annuls completely the contract of insurance, and the insurers are free whatever may be the cause of the accident, and even if no accident should occur. This is the meaning of Art. 465 of the Commercial Code.

24. The questions of maritime law are judged by tribunals of commerce, composed of judges engaged in commerce. Such tribunals, however, do not exist in all ports, and where they are wanting, the causes are decided by jurisconsult judges. Frequently both the one and the other demand nautical experts for the points in controversy. In no tribunal, civil or commercial, are there juries which only sit in criminal tribunals.

In order to facilitate the reference to the Articles of our Commercial Code and of the Mercantile Marine, I annex a copy.

(signed) *T. Corsi.*

Rome, 15 March 1875.

— No. 10. —

GERMANY.

(M. 11,528.)

Germany.

Mr. *H. G. Macdonell* to the Earl of *Derby*.

My Lord, Berlin, 4 August 1875.

With reference to your Lordship's Despatch, No. 6 (Commercial), of the 10th of February last, and No. 33 of the same series, of the 27th ultimo, instructing Lord Odo Russell to obtain information as to the Law of Germany on the subject of marine insurance, I have the honour herewith to enclose a report drawn up by Dr. Zimmermann, the legal adviser employed by Her Majesty's Embassy, answering the questions communicated by the Board of Trade, transmitted to his Excellency in the Despatch above referred to.

Dr. Zimmermann's Report of 3/8/75.

Deutschen Seeschiff-fahrts Gesetze, separate.

Owing to Dr. Zimmermann's absence, I have been unable to forward this document, which I only received this morning from Wiesbaden, at an earlier date.

I have the honour also to forward for your Lordship's information, by this day's book-post, a copy of the German Maritime Code (pages 33–159 of the "Sammlung der Deutschen Seeschiff-fahrts Gesetze"), from which Dr. Zimmermann has drawn up his Report.

I have, &c.

The Earl of Derby, &c. &c. &c. (signed) *H. G. Macdonell.*

Answers to Questions concerning the Law of Foreign Countries on the Subject of Marine Insurance.

1. Before answering the several questions here submitted, it may be expedient to offer a few general observations.

The law of marine insurance throughout Germany is mainly regulated by the German General Commercial Code, hereinafterwards referred to by abbreviation "G. G. C. C.," explained by the proceedings of the Commission appointed for the preparation of the said Code, herein referred to as "Minutes of Proc.," and by decisions of the courts of justice. As regards such decisions, it is to be mentioned that the divers German States here particularly concerned, namely, those bordering the sea, as Prussia, Mecklenburg, Hambro', Bremen, likewise Lubeck, Oldenburg, have differently constituted courts of justice, and divers forms of proceedings, and various courts of appeal; it therefore follows that there is not that uniform practice and law as would appear desirable.

See p. 118, of "Sammlung der Deutschen Seeschiff-farts Gesetze." Encl. 2 in Mr. Macdonell's No. (Commercial) of Aug. 4, 1875.

It is the leading principle of the G. G. C. C. that the contract of insurance is a contract of indemnity merely, and is not made a source of profit to the assured, for according to Art. 782 of that Code, "the interest *capable of being estimated in money value* which a person has, that a ship or cargo safely overcomes the perils of the sea, may be an object of marine insurance."

2. If it is clearly proved that the assured knew at the time he was insuring his property or interest that he was over-insuring it, the effect on the insurance would be that the entire contract of insurance is void.

See p. 121.

Art. 790 of the said G. G. C. C., in treating the subject of over-insurance, is providing as follows:—

"The full value of the object insured is the insurance value."

"The sum insured cannot exceed the insurance value."

"So far as the sum insured does exceed the value of the object insured, the insurance is of no legal effect."

It is evident that this provision of the G. G. C. C. is establishing certain principles in insurance transactions, and general rules of the common law touching fraud

fraud and deceit are not at all affected thereby. From whatever cause an over-insurance may arise, be that mistake, error, or intent, the sum insured never can exceed the insurance value. Likewise it is clear that these provisions do not serve as an exact answer to the question here raised, which is, what effect the fact would have if it is *clearly proved* that the assured *knew* at the time he was insuring his property or interest he was over-insuring it.

Considering that the said Code as mentioned does not specifically answer this question, and does not give any direction affecting the general rules of the common law, we have to take recourse to such general rules, by the same every insurer ought to know the law that the sum insured cannot exceed the insurance value; if, therefore, it is proved that *he knew* at the the time of effecting such insurance that he was over-insuring, he must necessarily have knowingly proposed a false value of the object of insurance; such dealings, however, fall within the province of fraud and deceit; necessarily it would be requisite to inquire how far the contract of insurance was tainted with fraud and vitiated thereby; this view has been also maintained by the Commission intrusted with the preparation of the said Code, who held that the contract of insurance is altogether void in all cases where, according the general principles of law, the entire contract is void for *dolus caussam dans*. (Of. Minutes on Proc. of S. C., page 3,017.)

3. If no such knowledge as is referred to in the last question can be brought home to the assured, but if, in fact, the amount insured exceeds the actual loss, the law does prohibit the recovery of the excess.

I presume that the expression "actual loss" is intended to represent the insurance value at the time of the insurance; for the actual loss and insurance value may represent different amounts with perfect good faith of the insured. Assuming that A. insured a parcel of merchandise, and that at the time of effecting such assurance, the said merchandise had a certain market value, and that the market value at the time of any marine disaster were gone down to a considerable extent, it would be rather questionable how the expression "actual loss" should be correctly interpreted. Without regard to such possible difference, the question seems in principle to be fairly answered in the above Art. 790, C. C., as follows:—

> "That so far as the insured sum exceeds the value of the object insured, the insurance has no legal effect." *See* p. 121.

4. In the case of a policy on a ship where no value is fixed by the policy, the value of the ship [taken to be?] for the purpose of estimating the amount for which the underwriters are held liable, is regulated by Art. 799 of the said Code, which provides—

> "That as the insurance value of the ship where the parties concerned have not agreed upon any other basis of valuation, is considered the value which the ship had at the time when the risk commenced to run for the assurer." *See* p. 123.

It is, therefore, her value at the port of departure. (Of. Minutes of S. C., page 3034.)

As regards outfit, it may be as well, in order to avoid any misunderstanding, to examine that expression more closely; outfit, so far as it is merely of a transitory nature for the purposes of the present voyage, in like manner as provisions, are not, of course, included in the insurance of the "ship."

Minutes of Pr. of S. C., pages 3073–3076, so far, however, as by outfit, should be understood anything for permanent use or fixed to the ship for her object of maritime trade, it is included in the insurance of the ship. (Art. 800, C. C.)

Premium of insurance is not included in the "value at the port of departure;" if it is intended to insure the same, it must be specially expressed. (Art. 800, C. C.)

These rules, as regards costs of outfit and insurance premium, equally apply to insurances where no value has been fixed as to valued policies. From the above directions, it follows that no deduction is made *for wear or tear*; that the value is not *that at the time of loss*, or what would have been her value at the port of destination.

5. In the case of a policy on a ship where the value is fixed by agreement and

Germany.

valuation on the policy, the insured, in case of total loss, actual or constructive, cannot recover from the insurer the amount fixed in the policy, if materially greater than the actual value of the ship at the time of the commencement of the voyage, or at the time of the loss; provided that the commencement of the voyage was the time agreed upon when the risk should commence to run; and likewise the insured may thereby recover a greater value than the actual value at the time of the loss. As a general rule the insurer is entitled to ask for a reduction of a valuation only in that case when he can prove that the valuation materially exceeds the value of the object insured (Art. 797, C.C.); that is to say, if the parties have not agreed upon any other basis for the valuation, the value which the ship had at the time when the risk commenced to run.

6. The steps the insurer may take to open the policy, and contest the question of value, where he has reason to believe that the insured value exceeds the actual value, are suggested in Art. 797 of the said Code, which provides as follows:—

See p. 123.

> "The insurer, however, is entitled to demand a reduction of the valuation, if he can prove that the same contains a material overcharge.

This provision applies specially to all cases where no fraud is charged. The valued policy being the result of a mutual agreement, it may well be questionable whether the parties are not bound by the same, if such agreement was made *bonâ fide*; in order to avoid any dispute on that point, the Code gives the right to re-open such agreement, in case of a material overcharge; the insurer in such case may demand a reduction of the sum as valued.

See p. 111.

No special remedial procedure is accorded to the insurer in the G. G. C. C., beyond the provision in the said 757th Article; without entering here in a general discussion about legal remedies in the divers courts of justice, it may be mentioned that the same, according to circumstances, entitle the insurer to follow up his right as plaintiff by bringing an action for the reduction of the amount overcharged, and setting aside the contract of insurance on the ground of fraud or error, or he may plead overcharge, error, or fraud, as defendant, the proof being incumbent upon him. The nature of the proceedings will, of course, depend upon the peculiar circumstances of the case; in short, it may be said that in case of such over-insurance, the insurer will have all remedies the law does generally give for a wronged party, the specific nature of that remedy depending on the nature of the wrong.

The said Code further admits a distinction in case of expected profit insured; if it is intended to challenge that valuation, the insurer has to prove that according to commercial estimation the same has exceeded the profit to be expected at the time of making the contract. (Art. 797.) The insurer being entitled to make his election in enforcing his right, either by bringing a direct action, or by plea.

When it is asked "what amount can the insured recover?" we find that according to the Code it is incumbent upon the insurer to prove the over-charge, and to demand a corresponding reduction; the sum so reduced represents the amount the insurer may recover.

If no specific basis for the valuation has been agreed upon between the parties, the insurance value of the ship is the value at the time when the risk began to run for the insurer. (Art. 799, C. C.)

See p. 123.

7. If he has the right to open the question of value, no particular conditions are imposed to prevent him from doing so frivolously and vexatiously, beyond the general rules in taking legal proceedings. It may be observed here that an important difference exists in the mode of commencing legal proceedings in some parts of the Continent from that in England.

By the regulations made in the Code of Civil Procedure in Prussia-proper, any proceedings in bringing an action are commenced, not in any form analogous to the Common Law practice by writ of summons, but by filing a bill, such bill being subject to a preliminary examination of a judge on the point whether by the same a *primâ facie* case has been made out; if no such *primâ facie* case is made out, the examining judge has power to reject that bill at once; *ex parte*, a fresh bill may be filed at once; a mode of procedure of very questionable value.

8. In

8. In case of partial loss by damage to ship, the assured may, as a rule, recover wages and expenses accruing during the time of stay in port for necessary repairs; those wages and expenses being considered in the light of general average.

The G. G. C. C. disposes of the present question in a more general point of view. It provides, in Art. 708:—"General average exists in the following cases, provided that the requirements mentioned in Art. 702, 704, and 705 are fulfilled, so far as nothing particular has been prescribed in the present Article— *See* pp. 96, 97.

"'4. If the ship has entered a port of refuge in order to avoid a common danger threatening the ship and the cargo, in continuing the voyage, particularly in case if such entering took place for making necessary repairs of a damage the ship had suffered during the voyage.' *See* sect. 4 of Art. 708, pp. 97, 98.

"In such case are treated as general average—

"'All expenses of entering and leaving the port, the costs of stay of the ship herself, the wages and board of the ship's company, the costs of shelter of the ship's company on shore, if and so long they could not remain on board the vessel, and, in case the cargo is to be discharged for the same reason which caused the entering of the harbour of refuge, the expenses of unloading and reloading, and the expenses of the storing on shore up to the time when the same could be brought again on board.'

"All expenses of such stay are to be taken in account only for such period as the cause exists which caused the entering of the port of refuge. If necessary repairs of the ship were the cause, the costs of the stay are to be taken in account only up to the time when such repairs could be completed. The costs of repairs to the ship form only part of general average, so far as the damage itself to be repaired is general average."

9. The said G. G. C. C., in Art. 783, clearly allows the shipowner to insure freight or profit. *See* p. 119.

10. The said G. G. C. C. does allow the shipowner to fix the amount of such freight or profits by agreement and valuation in his policy. (Art. 797.) *See* p. 123.

11. The shipowner is allowed to insure the gross freight, *i.e.*, the whole sum paid to or to be paid to him for the use of his ship; for Art. 801 of the said G. G. C. C. provides that "the freight may be insured up to its gross amount, so far as the same is not already insured by the insurance of the costs of outfit, of wages, and of costs of insurance." *See* Art. 801, p. 124.

12. If gross freight is insured, and the ship is lost on her voyage, the shipowner cannot of course recover the gross freight, but only the amount he has actually lost. The G. G. C. C. provides that a total loss of freight exists only in case that the whole freight has been lost (Art. 859), and freight is not considered here as a claim, but as what would have been earned as freight; he could, therefore, not include expenses, such as wages, port dues, &c., not paid. *See* p. 142.

13. If he cannot recover the gross freight, what are the steps by which the insurer can resist payment, and in what manner is the amount, which he is entitled to recover in respect of freight, calculated? In other words, what are the deductions to be made from the gross freight, in respect of the expenses above mentioned, and how are these expenses ascertained?

As observed before, according to the principles laid down in the G. G. C. C., freight can be insured as to its gross amount only so far as the same has not been insured by the insurance of costs of outfit, of wages, and the costs of insurance. (Art. 801.)

As to the manner of calculation of the freight, it is provided in the said Art. 801, that as the insurance value of the freight is considered the freight, as agreed upon in the freighting contracts, and if no fixed freight has been agreed upon, or so far as goods of the shipowner have been shipped on account of the shipowner, the amount of the usual freight (Art. 620); as regards the mode of ascertaining the expenses, it would be incumbent upon the insured to prove the same, and that he would be entitled to do in all legal modes admitted in the rules of civil procedure; the G. G. C. C. does not give any special rules for that purpose.

14. If freight is prepaid to the shipowners, and the ship is lost before the completion of the voyage, the merchant may recover the freight from the shipowner; for the G. G. C. C. provides, in Art. 618—

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See p. 72.

"No freight is payable for goods which have been lost by *any misfortune*, and if the same has been prepaid, it is to be returned, if anything to the contrary has not been agreed upon."

"This provision does apply also in cases when the entire ship has been freighted, or a proportionate part, or a distinct space of the same."

15. In the case of a policy on goods which are not valued in the policy, the full value of such goods is the insurance value of the same (Art. 790, G. G. C. C.); as to the mode how such value is to be estimated, no special rules are given in the said Code; the general rules for the valuation of objects, the value of which is in dispute, are therefore to apply. In ordinary cases, probably, the invoice price, together with incidental charges, if any, or the market value, will constitute such full value, or the same may be ascertained by any usual method of proof by brokers, experts, witnesses, and so forth. No uniform rules do exist in that respect for the reason above alleged, that the procedure and means of evidence, as well as the modes of taking evidence, are different in the different States of Germany; some of them acting upon more summary proceedings, others upon very tedious process, allowing regular appeals not only on the importance of the evidence, but also on its effect.

16. If valued beyond their real value at the port of shipment, or at the port of destination, can the assured recover the excess?

See p. 124.

The G. G. C. C. allows the assurer "to insure the full value" of the goods, and the expected profit besides such full value; the expected profit, however, is especially to be declared, and, "as the insurance value of the goods is considered that value which the goods have at the place and the time of the shipping, adding all costs accruing until they are on board the vessel, including the costs of insurance, provided that the parties have not agreed upon another basis for the estimation of the value. The freight, as well as any costs accruing during the voyage, are added only so far as that has been agreed upon."

The provisions of this article do likewise apply if the insurance of the goods has been effected on a valued policy (Art. 803, G. G. C. C.); the assured can, therefore, not recover any excess beyond the value indicated above.

17. If not, by what steps can the insurer resist payment?

The G. G. C. C. does not point out any particular steps by which insurer would be able to resist payment in case such excess should be demanded, it being competent for the insurer to use all regular remedies the law will give him to resist any unjust claim; according to circumstances, he may file a bill for rescinding the contract of insurance, or he may plead fraud, or specially over-insurance, in defence.

18. Is there any implied undertaking on the part of the insured that the ship shall be seaworthy?

No direct provision is contained in the G. G. C. C. pronouncing such implied undertaking. Very strict obligations, however, are imposed upon the proposer of an insurance as to the information to be given by him to the insurer of all circumstances known to him which are of importance in adjudging upon the risk; and the proposer is bound to inquire for such circumstances which he ought to know on proper inquiries made. (Art. 810–815.) On the other hand, Art. 825 of the said Code expressly provides, "the insurer is not bound to make good any damage described hereafter:

See sect. 1 of Art. 825, p. 131.

"1. On the insurance of ship or freight, any damage arising from the fact that the ship was not in a seaworthy condition."

And the proposer is not entitled to plead ignorance on facts which, on due inquiries made, he could be acquainted with.

19. Does this undertaking apply to time policies as well as to voyage policies?

With regard to the observations made to Question No. 18, no distinction is pointed out in the G. G. C. C. between time policies and voyage policies on the point in question.

20. Is it an absolute warranty of seaworthiness, or is it only an undertaking that the shipowner and his agents and the master of the ship shall, to the best of their ability, do all they can to make and keep the ship seaworthy.

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As mentioned before, no distinct warranty or undertaking is imposed on the insured in the G. G. C. C. to the effect that the shipowner and his agents and the master of the ship shall make and keep the ship seaworthy.

In the system of the G. G. C. C. the duties of the shipowner and the master, as regards the seaworthiness of the ship, are specifically defined; the Code does not require any kind of warranty from the proposer, but it places him under a strict obligation to inform himself of all circumstances affecting the insurance risk, of which, on due inquiry, he could inform himself, and to impart such information to the insurer.

21. Under the provisions of the G. G. C. C. the question cannot well arise whether this undertaking is fulfilled if the ship is seaworthy at the time of first leaving port after the commencement of the policy, or whether it does extend throughout the whole voyage or period covered by the policy; for it has been shown—

1. That the insured is bound to give all information within his power to the insurer. *See* p. 131.

2. That the insurer is not bound to make good any damage arising from the fact that the ship has been put to sea in an unseaworthy condition. (Art. 825.)

The true interpretation of the last provision seems to be that the insurer will not be discharged from his liability if unseaworthiness intervened during the voyage.

22. The true interpretation of the above alleged Art. 825 seems to be that the unseaworthiness of the ship discharges the underwriters from liability, also in such cases in which the loss was not in any way occasioned by the unseaworthiness, always, however, under the supposition that the ship was put to sea in an unseaworthy condition. *See* p. 131.

23. In what manner does deviation from the usual course of the insured voyage affect the liability of the underwriter? Does such deviation discharge the underwriter from liability in all cases, or only in those cases in which the deviation may be consideration as having increased the risk insured?

The G. G. C. C. distinguishes—

(*a.*) An alteration of the voyage before the risk commenced, or after such risk commenced for the insurer;

(*b.*) Whether such alteration took place without instruction or without sanction of the insured party;

(*c.*) Whether a deviation has taken place from the course corresponding to the voyage insured.

On the assumption that the case *a. b. c.* is considered in the above question, the said Code provides that the underwriter is not liable for any misfortune then happening, always with the following exceptions:—

1. If it appears that the increase or alteration of the risk could not have any influence on the later misfortune;

2. If the increase or alteration of the risk after the risk of the insurer had already commenced to run, was caused by a case of necessity except that the latter is founded on a risk for which the insurer is not liable;

3. When the master was forced to such deviation by the commands of humanity.

24. What is the nature of the tribunal by which questions between insurer and insured are tried? Is it a judge and a jury, or is it simply a judge, or is it a judge or judges assisted by mercantile or nautical assessors? In short, what is the composition of the tribunal, and does it give satisfaction?

It has been already mentioned that in Germany, in the different States bordering the sea-shore (Prussia, Mecklenburg, Hambro', Lubeck, Bremen, Oldenburg), the courts of justice competent to adjudicate on matters of marine insurance are differently constituted; it so happens that even in one and the same country, say Prussia, these courts are differently constituted (at Königsberg, Danzig, Stettin); in like manner different rules of procedure prevail in the said courts.

Germany.

So much may be stated—

1. That, as a rule, the courts are formed by several judges.

2. That no jury is assisting the courts.

3. That nautical assessors in some cases assist with full vote, sometimes merely as advising experts.

4. That from all these courts an appeal lies to courts of appeal.

5. That the manner and form of appeal is different in the various countries.

6. That such appeal is granted as matter of course.

7. That a final appeal in forms, different according to the nature of the case, lies to the Superior Court of Commerce at Leipsic.

8. This Superior Court of Commerce (Oberhandels gericht) is eminently a final court for commercial causes all over Germany, constituted only by judges, unassisted by jury, or standing mercantile or nautical assessors.

The question whether these courts of justice have given satisfaction may be answered by the facts,—That throughout Germany the present various modes of civil procedure, as well as the constitution of the courts of justice, have been considered very unsatisfactory; therefore the Imperial Chancellor has introduced to the German Parliament the draft of a common code of civil procedure, together with a law for the re-organisation of the courts of justice throughout Germany; that a Select Committee is at the present moment engaged with the examination of these proposed new laws, and that the Report of that Committee is expected to be ready for the next meeting of that legislative body.

A final remark may be permitted: The above observations do not claim to be exhaustive answers to the questions proposed: the subject involved in each single question is of such extensive bearing, that the same could be fully mastered only in a complete exposition of the system of law under which this branch of jurisprudence is treated; such complete exposition it is presumed not being expected, so mere outlines have been given, based on the general German Commercial Code.

Berlin, 3 August 1875. (signed) *Dr. Ed. Zimmermann.*

— No. 11. —

UNITED STATES.

United States.

(M. 8362.)

Mr. *McPherson* to Sir *Edward Thornton.*

Sir, Washington, 13 May 1875.

I HAVE had the honour to acknowledge the receipt of your Excellency's note of the 27th of February, enclosing questions respecting the law of Marine Insurance in the United States, and to inform you of the causes which prevented me from promptly making the researches necessary to enable me to answer them. I now transmit the replies; and in so doing have to observe that it is exceedingly difficult to say what is the state of the law in this country upon any given subject not exclusively of federal cognizance, for as to all other classes of cases there are numerous distinct jurisdictions the decisions of no one of which bind any of the others. In answering them as to the state of the law, we can only follow the best text writers, and the decisions of the most respectable courts.

Very respectfully,
(signed) *Jno. D. McPherson.*

Answers to Questions concerning the Law of Marine Insurance in the United States.

1 The contract of insurance is a contract of indemnity merely.

2, 3. *See* Answers 16 and 17.

4. Where the value of the vessel is not fixed in the policy, her value in case of loss is that at the port of departure, with reasonable allowance for wear and tear. Premiums and equipment enter into the value.

5, 6, 7. *See* Answers 16 and 17.

8. In case of partial loss, wages and expenses in port can be recovered by the assured. They are considered in the light of general average.

9, 10, 11. Freights and profits may be insured, and the value may be fixed by agreement or valuation. Gross freight may be insured.

12, 13. If freight be not fixed by valuation, the question becomes one of indemnity only, and in effect only net freight can be recovered. This principle governs the deductions to be made, depending on the facts of each case.

14. Freight prepaid may be recovered back if goods be not carried to destination, unless the contrary be agreed.

15. The value of goods, when not fixed in the policy, is their market value at port of shipment, including charges.

16, 17. In all cases of valuation made in the policy, it is taken to be the true value of the ship, goods, freight, or profits, unless shown to be fraudulent, in which case the fraud avoids the policy; otherwise the assured recovers the valuation.

18, 19, 20, 21, 22. There is an implied absolute warranty that the vessel is seaworthy when she sails; and there is an implied undertaking that the owner and master will, to the best of their ability, keep her so. The warranty applies to the time of sailing; the undertaking to the whole voyage. It has been held in several late cases that in time policies there is an implied warranty of seaworthiness at the port of departure; but this cannot be said to be a settled rule of law. The undertaking to keep the vessel seaworthy to the best of the ability of the owner and master seems to apply to time policies. Unseaworthiness, when a breach of warranty, absolutely discharges the underwriters from liability.

23. Deviation discharges the underwriters from loss during deviation. If the voyage be resumed without any change of risk, the liability for loss after resumption is restored.

24. Policies are sued upon in the common law courts almost invariably, although the Admiralty Courts have occasionally taken jurisdiction of such cases. That the latter courts have not been more frequently resorted to has, no doubt, been owing very much to doubts as to their jurisdiction, but it indicates also that the common law courts have given satisfaction. In the latter courts the trial is by jury.

Sir E. Thornton, K.C.B.,
&c. &c. &c.

Jno. D. McPherson.

MARINE ASSURANCES (FOREIGN COUNTRIES).

COPY of Replies to Questions concerning the Law of Foreign Countries on the subject of Marine Insurance (in continuation of Parliamentary Paper, No. 114, of Session 1875).

COPY of further Replies to Questions concerning the Law of Foreign Countries on the subject of Marine Insurance (in continuation of Parliamentary Paper, No. 304, of Session 1875).

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed,*
2 *July and* 9 *August* 1875.

[*Price 7d.*]

304.

Under 6 *oz.*

RETURN to an Order of the Honourable The House of Commons, dated 28 July 1875;—*for*,

RETURN "of the Names of those CERTIFICATED MASTERS of the MERCANTILE MARINE who, between the 1st day of January 1870 and the 1st day of July 1875, have passed the BOARD of TRADE EXAMINATION in 'STEAM' and 'COMPASS DEVIATION.'"

Board of Trade, 10 August 1875. } T. H. FARRER.

RETURN of the Names of those CERTIFICATED MASTERS of the MERCANTILE MARINE who, between the 1st day of January 1870 and the 1st day of July 1875, have passed the BOARD OF TRADE EXAMINATION in "STEAM" and "COMPASS DEVIATION."

PASSED IN STEAM.

Tucker, Arthur Grenville.	Bayley, Edward.	Mahy, John David.
Perkins, James Hughes.	McNeil, John.	Cox, Nesbet.
Fox, Gardiner Guion Joseph.	Cachemaille, Eugene Victor.	Boaden, Christopher.
Sharer, John Wilson.	Swayne, Charles Richard.	Wardlaw, Andrew.
Ponting, Henry John.	Taylor, Elliot Charles.	Jansson, Frans August.
Kelly, George.	Winckler, Augustus Robinson.	Edmondson, William.
Edmond, John.	Litten, Charles George.	Flinton, Benjamin.
Murray, David.	Cook, Smart Somerville.	Peck, George.
Housagoe, John Gayford.	Burnup, William Henry.	Morgan, Robert.
Nicholson, Matthew.	Storm, John.	Jenkins, Robert.
Grieves, John.	Weaver, Isaiah.	Tickall, George.
Hutchinson, Robert.	Guthrie, Robert.	McCarthy, William.
Wilson, Robert Stafford.	Mackerness, George Alfred.	Armstrong, John William.
Brown, John Edward.	Knight, Alfred Pilkington.	Prentice, Thomas.
Robinson, Richard.	Deacon, Robert.	Satterley, John Thomas.
Scott, Charles.	Shiell, James Lunn.	Blackler, Adams.
Hurst, Robert Ridley.	Smith, George.	Louttit, Alexander.
Wright, Henry.	Ogilvie, Joseph.	Bussell, Robert.
Gordon, James.	Anderson, Thomas.	Gibson, James.
Hopkins, George Thompson.	Meikle, George.	McLeskie, John Fraser.
Watt, John.	Stevenson, Henry.	Levie, William.
Hudson, James.	Mitchell, James.	Rutter, Charles.
Bains, James Alexander.	Albert, Alfred.	Wilson, Robert.
Barton, Charles.	Sainthill, George Augustus.	Noble, Joseph.
Avery, Benjamin John.	Wilkin, Sydney James.	Forster, Ralph.
Walsh, Ambrose.	Townsend, Robert.	Gittins, Charles.
Brown, James Simpson.	Watson, Robert.	Hunter, William.
Garson, Matthew.	Mines, Robert.	Cooley, Charles John.
Smith, John Dodd.	McDonald, George.	Collins, Henry.
Horlock, Henry Albert.	Wight, Henry Potts.	Ponsonby, George Glenn.
Ross, John.	Gardner, William Samuel.	Atkinson, Thomas Fewson.
Mardon, Frederick Edward.	Moore, John Gilhespy.	Croll, Robert.
Moon, Edward Mercer.	Ellwood, William.	Rowland, William.
Stannus, James.	Smith, Duncan.	Hughes, Ferdinand.
Dunlop, John.	Steiger, Rowland de.	Kennedy, James Branch.

Scowcroft, Hugh Arthur Fender.
Price, Edward.
White, William.
Wilks, William.
Murray, Augustus Berney.
Williams, George.
McLeod, John Lyons.
Crispin, Frederick William.
Hutchinson, William.
Pollock, John.
Fenwick, Thomas Dodd.
Stacey, William.
Fetherstonhaugh, Edward.
Daniel, John.
Myers, Samuel.
Smith, William.
Rhind, Robert Brown.
Plant, Samuel.
Hatherway, William.
King, Atwell Charles Rowley.
Stuart, John.
Brumell, Henry Peareth.
Scott, Thomas Samuel.
Pfeiffer, Carl August.
Cook, Alexander.
Horton, Charles.
Smith, William.
Bartlett, William.
Hinman, Robert.
Shotton, Jacob.
Purvis, John Bowlt.
Mitchell, Thomas Clarke.
Langlois, Helier.
Ralls, George.
Worster, William.
Thompson, William Henry.
Baird, James.
Harrison, John Baylay.
Newson, William.
Harrison, James Obadiah.
Gaye, Gerrard.
Parson, George Fry.
Almond, Thomas Michael.
Robinson, Thomas Effingham.
Brown, George Turnbull.
Spence, Jonathan.
Reed, William.
Wake, Richard.
Spence, Charles Ogilvy.
Longley, Herbert.
Dunn, James Lawrence.
Allcock, John.
Gunn, John Johnson.
Wilton, Samuel.
Scott, David.
Walker, William.
Nicoll, Charles.
West, Frederick.
Gibson, Samuel William.
Goodsall, Robert Aldrich.
Ronald, Alexander.
Wilson, William.
Melrose, James.
Darling, John.
Hunter, Thomas.
Angel, William Henry.
Parsell, Henry.
Wickham, Henry.
Hawkins, William Henry.
Davies, Thomas.
McNabb, Richard.
Pritchard, Robert Adolphus.
Kirby, William.
Scott, George Alexander Brown.
Williams, Henry Charles.
Stott, James.
Locke, Alexander.
Lawson, Edward.
Smith, Duncan.
Gimblett, Henry James.
Care, William Henry.
Batty, Thomas.
Fentie, George Robert.
Hyde, William.
Pottinger, George.
Esson, William.
White, Montague Robinson.
Heane, Alexander Baillie.
Johnston, Thomas.
Hubbard, Robert Richard.
Mackay, William Aberdein.
Cathro, Alexander.
Gordon, Robert.
Williams, David.
Hillcoat, Charles Henry.
Murray, John Home Hamilton.
Bean, Alfred.
Petherick, Edward.
Eden, Charles Henry.
Ritchie, James.
Duncan, Archibald.
Carlile, John.
Leacey, Charles Philip.
Jarvis, William.
Legget, James Ferguson.
Chapman, Robert.
Scott, John.
Crane, Joseph Smith.
Knight, William.
Mavor, Robert.
Gulland, Andrew.
McRitchie, Alexander.
Wood, William.
Jones, Daniel.
Ward, William Somerset.
Trench, Charles Edward Le Poer.
Tilmouth, Robert John Cousens
Harvey, Adolphus William Horsnell.
Eills, William Henry.
Luckes, John James Richards.
Holdich, John Peach.
Plumley, Samuel.
Thomson, James Fraser.
Roach, Thomas.
Massingham, Samuel John.
Perriam, Edward George.
Harvey, Nichol.
Bristow, Frederick.
McNabb, Thomas.
Ridge, Samuel Snashall.
Fellows, Seth Parsons.
Mosey, Richard.
Scott, William Ash.
Malcolm, David Baird.
Campbell, James.
Jacobsen, Wilhelm Emil.
Maxwell, William George.
Hender, Francis Hocking.
Wakern, William.
Archer, Thomas.
Wiltshire, James.
Howell, Edmund Hollond.
Gemmell, John.
Pinkham, John.
Bridges, David.
Nicholson, Henry John.
Evans, Joseph.
Ayles, John Mount.
Coupland, Richard Thomas.
Park, Thomas.
Waugh, Robert.
Haldane, Augustus Maitland.
Sanders, Henry Gilbert.
Walker, Robert Sutherland.
Stephens, John.
Wilcox, Henry George.
Marder, Nicholas.
Hamon, Edward James.
Bowen, John Fleming.
Steel, William Wallace.
Rossell, John Christopher.
Consterdine, Henry.
Tate, William Gardner.
McKay, George Daniel.
Baines, Ryde Rupert.
Ockenden, William Henry.
Mowat, Thomas Robertson.
Stewart, Alexander.
Farmer, George.
Neal, Samuel George.
Davidson, Alexander.
Farran, John Ball.
Lewis, George Henry.
Cunningham, Andrew.
Taylor, John Henry.
Roberts, Arthur.
Best, Charles William.
Barrett, Arthur Edwin.
Rickaby, Robert.
Moore, Thomas.
Mason, Matthew.
Windeatt, William Hamlyn.
Pearse, Richard.
Robertson, Robert.
Whalley, Francis Everett.
Le Brocq, Philip.
Oates, Thomas.
Hunter, George.
Miller, John.
Wales, Thomas.
Nesbitt, John Edward.
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Barwise, William.
Wigney, Arthur.
Pain, Henry.
Pollard, Thomas William.
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Buchanan, John Will.
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Barrie, Charles.
Spowart, Stephen.
Denicke, Ernest.
Gibb, Robert.
Swan, George.
Tillett, Alexander.
Anderson, Peter.
Symonds, William.
Newman, Clement Hugh.
Seals, John.
Beauvais, Francis Robert Thomas.
Smith, William.
King, Thomas Charles.
Turner, Thomas Derwent.

Friend, Edward.
Garrick, William.
Stewart, John.
Harris, Henry Thomas.
Zerwick, Francis Edward Julius.
Barker, Horace John.
Ayles, Thomas Francis Edward.
Muir, James.
Johnson, Edward.
Taylor, William.
De Gruchy, Thomas.
Couves, Arthur James.
Cosens, William.
Mills, James.
O'Malley, John.
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Johnson, John.
Young, William Michael.
Charlton, Alfred.
Shaw, Thomas.
Lindbergh, Carl Edward.
Hannah, William Templeton.
Eden, John Woodward.
Clarkson, Robert Matthew.
Roy, George.
Stewart, Cornelius.
Mossop, Richard George.
Caines, James Sealy.
Matthewson, James.
Williams, Sylvester.
Churnside, Edward.
Frail, James Buskin.
Westhorp, William Hast.
Voules, Frank Herbert.
Owen, Thomas Rhodes.
Barnes, Frederick.
Claxton, Robert Osborne.
Harley, Edward John.
Wymark, Alfred.
Shearer, George.
Scale, Richard Ford.
Fulton, John.
Smith, Alexander Reid.
Fox, George.
Fisher, James.
Dumaresq, Philip.
Leigh, Reginald Augustus.
Jenkins, William Henry.
Arnold, Orlando James Harwood.
Atkins, James Samuel.
Sumner, Thomas Fletcher.
Budd, Peter Sutton.
Bugge, Rasmus.
Joll, Thomas Francis.
Smith, John.
Kendal, John.
Jones, Charles Powell.
Ellis, Edward Peppen.
Allan, John.
Foxton, James Cowart.
Jones, John Wilson.
Thompson, Andrew.
Auld, William Cowan.
Seavell, William Austen.
Renaut, Frederic Horatio.
Watkins, Thomas.
Storm, William.
Le Bœuf, Frederick.
Sotham, Frederick John.
Jones, John.
Walker, Thomas.
Anderson, George Cobban.
Pritchard, George.
Bailey, George.
Honeyborne, Frederick William.
Atkinson, Edward Peter.
Fry, Henry George.
Ste. Croix, D'Auvergne.
Mace, Alfred Edward.
Edwards, Arthur McKenzie.
Brunton, John.
Angel, John Fry.
Pearne, William George.
Colliver, William Davy.
Wright, James.
Lewis, Thomas.
Wheelan, William.
Cole, Edwin.
Henderson, Henry.
Hunter, James.
Barry, James John Harrold.
Hughes, Robert Henry.
Collin, Thomas.
Braes, Andrew Gardiner.
Montgomery, Alfred.
Ward, Richard.
White, John.
Sampson, Edward.
Pearse, John.
Littleton, Edward John.
Dawson, John.
Burton, Francis Charles.
Pearce, William.
Taylor, Joseph Whalley.
Nelson, Severin James.
Mitchell, Andrew.
Townsend, William Henry.
Fraser, Robert.
Irving, Peter John.
Hacket, John Webster.
McLachlan, Francis Jardine.
Flamank, John.
Macauley, Kenneth.
Westoby, George Thomas.
Flanagan, Joseph.
Husband, James Bruce.
Anderson, George.
Stephens, Charles.
Jenkins, John Henry.
Andersen, Oscar Eugen.
Gibson, Henry Thomas.
Challice, John Armstrong.
Twigg, Joseph.
Rea, John.
Smith, William Charles.
Burrows, Albert Crary.
Oughton, Alexander.
Cooper, James Cowel.
Tonkin, John Stevens.
Downie, Robert Carter.
Coward, John.
Dowdy, Joseph.
Everill, Henry Charles.
Marchant, William Stephen.
Glass, John.
Sandberg, John Anton.
Potter, Thomas.
Doughty, Joseph.
Jones, Evan.
Colville, Edward Leslie.
Sullivan, Timothy.
Lamplough, Christopher William.
Moodie, George.
Jackson, Samuel.
Taylor, Samuel Sampson.
Bruce, Adam.
Stephens, William.
Wetherall, William Alexander.
Butcher, George Frederick.
Harris, John.
Collard, John Deane.
Gomme, James Stephen.
Sedgwick, Edward William.
Garner, Walter.
Rose, Matthew.
Anderson, James.
Putt, Frank.
McKenzie, Alexander Goldie.
James, Henry William.
Cowie, William.
Cole, William.
Peters, Arthur Bishop.
Ellis, Joshua.
Hughson, Sinclair.
Perks, Edward.
Craig, David.
Wylie, Robert.
Savage, Thomas Sidney.
Erskine, William.
Gordon, John Ramsay.
Lee, Stewart Robertson.
Sawyer, John George.
Harris, George Edward.
MacMahon, Cullagh.
Letbe, Joseph.
Brinsden, James.
Hay, James.
Wilson, George Matthew.
Marshall, James Nash.
Anderson, Absolom.
Gray, Frederick Watson.
Henderson, Joseph Kimpster.
Thomas, Christmas.
Jones, Daniel.
Gilfoil, James Edward.
Jackman, William Arthur.
Davies, David.
Farquhar, Samuel Chapel.
Harvey, John Walker.
Beith, Alexander.
Yule, Andrew Wilson.
Towill, Stephen.
Honan, John.
James, John.
Callaghan, Michael.
Alderton, Thomas James.
Pender, William.
John, Richard Rodda.
Johnstone, Somerset James.
Flett, Peter.
Kemp, Thomas.
McEachern, Archibald.
Carpenter, John Thomas.
Davis, Thomas.
Clarke, Bennet Charles Stephenson.
Eratt, George Layton.
Taylor, John.
Elsden, Thomas Abraham.
Kemp, Thomas.
Jacks, William Waller.
Davies, Daniel Owen.
Jones, John.

Bruce, Alexander.	Barrett, William.	Smith, William.
Pirrie, William.	Tenzer-Raymond, Charles.	Boyes, Thomas Oxley.
Hunter, Thomas.	Doveton, John.	Hammond, James.
Hogg, Arthur.	Stewart, Charles Edward.	Newington, James John.
Denny, George Edward.	Ricker, Charles Clements.	Gerard, Peter.
Green, Malcolm.	Chippindall, Edward Cokayne.	Doughton, Thomas.
Raeburn, John.	Langen, Friedrich Adolf.	Hurry, Alexander.
Finlayson, Alan.	Hay, Joseph.	Green, William Alexander Frederick.
Frahm, Johannes.	Johnson, William Djurstrom.	
Maypee, Henry Thomas.	Malcolm, William.	Lewis, John Thomas.
Griffin, Frederic.	Van Deurs, Wilhelm Sophus Adolph.	Cumming, John.
Dabner, George.		Scott, William.
Haverberg, Heinrich Theodor Hermann.	Jackson, Charles.	Calder, Edward Reginald.
	Jackson, Samuel.	

PASSED IN COMPASS DEVIATION.

Lecky, Squire Thornton Stratford.	Thyne, James.	Dobson, Charles Meadows.
	Archer, Frederick.	Anderson, Absolom.
Beall, George.	Edwards, Arthur McKenzie.	McDougall, Colin.
Brown, James.	Smith, William.	Burns, James Robertson.
Thompson, William Henry.	Bain, Richard.	Irving, William Thomas.
Parsell, Henry.	Bradley, George.	Smith, Thomas.
Williams, Henry Charles.	Greig, James.	Emmett, Henry.
Scott, David.	Wright, Daniel.	Chippindall, Edward Cokayne.
Perry, Hugh Hamilton.	Doig, Andrew.	Talbot, Robert.
West, Frederick.	Owen, William Frederick.	Jackson, Charles.
Moore, John Grant.	Darling, Charles Barrett.	Guest, John George Rennoldson.
Owen, Robert.	Henderson, Henry.	
Tate, William Gardner.	Burrows, Albert Crary.	Efford, John James.
Hodge, James Albert.	Laird, James.	Thirkell, Thomas.
Mossop, Richard George.	Rea, John.	Newington, James John.
Ainsley, Henry Raper.	Molyneux, Samuel.	Bell, James.
Eills, William Henry.	Danby, John.	Mitchell, Owen Reynolds.
McInnis, Angus Alfred.	Maddison, John.	Cargill, William.
Talbot, Arthur.	Trench, Charles Edward Le Poer.	Barrett, William.
Johnston, David Hepburn.		Hutchinson, Walter Ernest.
Owen, Thomas Rhodes.	Thomas, Christmas.	

General Register and Record Office of Shipping and Seamen, Adelaide-place, London Bridge, 9 August 1875.

Allen Stoneham, Registrar General.

MERCANTILE MARINE (CERTIFICATED MASTERS).

RETURN of the Names of those Certificated Masters of the Mercantile Marine who, between the 1st day of January 1870 and the 1st day of July 1875, have passed the Board of Trade Examination in Steam and Compass Deviation.

(*Captain Pim.*)

Ordered, by The House of Commons, *to be Printed,*
13 *August* 1875.

459.

Under 1 *oz.*

MERCANTILE MARINE.

RETURN to an Order of the Honourable The House of Commons, dated 9 March 1875;—*for,*

RETURN "of Number and Nationality of Persons who, not being British Subjects at the time of their Examination, have obtained OFFICERS' CERTIFICATES in the BRITISH MERCANTILE MARINE since 1860."

Board of Trade,
17 March 1875.

T. H. FARRER.

RETURN of the Number and Nationality of Persons who, not being British Subjects at the time of their Examination, have obtained OFFICERS' CERTIFICATES in the BRITISH MERCANTILE MARINE since 1860.

NATIONALITIES, *i. e.*, PLACE OF BIRTH.	Masters.	Mates.	Engineers.	TOTAL.
America—United States	298	77	8	383
America—other than United States	9	5	1	15
Austria	14	6	1	21
Belgium	6	8	8	22
Denmark	143	86	9	238
Holland	25	21	16	62
France	20	22	8	50
Germany	261	193	6	460
Greece	2	3	2	7
Italy	11	5	5	21
Norway	61	46	3	110
Portugal	1	5	2	8
Russia	11	5	–	16
Spain	3	2	4	9
Sweden	98	99	2	199
Switzerland	2	1	–	3
Turkey	3	1	2	6
TOTAL	968	585	77	1,630

Note.—This Return is made from the 1st of January 1860 to the 31st of December 1874. The persons included in the above Return are persons whose places of birth are given in the official records as in the above table. Beyond this information, there is nothing to show whether they were or were not British subjects at the time of their examination.

General Register and Record Office of Shipping and Seamen,
6, Adelaide-place, London Bridge, E.C.
16 March 1875.

Allen Stoneham,
Registrar General.

MERCANTILE MARINE.

RETURN of Number and Nationality of Persons who, not being British Subjects at the time of their Examination, have obtained Officers' Certificates in the British Mercantile Marine since 1860.

(*Captain Pim.*)

Ordered, by The House of Commons, *to be Printed,*
21 *April* 1875.

311

MERCANTILE MARINE FUND (1873-4).

1873-4.

AN ACCOUNT of the MERCANTILE MARINE FUND, under the Act 17 & 18 Vict. cap. 104, sect. 429, showing the INCOME and EXPENDITURE for the Year ending 31st March 1874.

(PRESENTED PURSUANT TO ACT OF PARLIAMENT.)

Ordered, by The House of Commons, *to be Printed,*
11 *February* 1875.

AN ACCOUNT of the MERCANTILE MARINE FUND,

RECEIPTS.	CASH.	EXCHEQUER BILLS.
	£. s. d.	£. s. d.
For Balance in hand 31st March 1873, as shown in the preceding Account - -	29,563 12 10	236,600 – –
LIGHT DUES AND LIGHTHOUSES:		
For Light Dues received:		
Trinity House: £. s. d. 326,818 6 –		
Irish Lighthouses: £. s. d. 22,083 12 11		
Northern Lighthouses: £. s. d. 50,205 3 10	399,107 2 9	
MERCANTILE MARINE OFFICES:		
For Fees, &c. received under "The Merchant Shipping Act," as per Account (B.), page 5 - - - - - - - - - - - - - - -	93,243 8 10	
CHAIN PROVING ESTABLISHMENT:		
For Fees received for testing Chain Cables, &c. by the Trinity Proving House, under Sect. 12 of the Merchant Shipping Act Amendment Act, 1872 - - - - -	724 17 3	
INTEREST:		
For Interest received on Exchequer Bills and on Accounts of Superintendents of Mercantile Marine Offices at Local Banks - - - - - - - - - -	6,688 3 5	
For Contribution from Imperial Funds on account of Emigration Officers for 1873-4 -	480 3 4	
EXCHEQUER BILLS:		
For Exchequer Bills purchased (as per contra) - - - - - - - -	- - -	20,000 – –
£.	529,807 8 5	256,600 – –

Board of Trade,
February 1875.

under the Act 17 & 18 Vict. c. 104, for the Year ending 31st March 1874.

PAYMENTS.			CASH.	EXCHEQUER BILLS.
			£. s. d.	£. s. d.
LIGHT DUES AND LIGHTHOUSES:				
For Expenditure, as follows:				
	Trinity House.	Irish Lighthouses.	Northern Lighthouses.	Total.
	£. s. d.	£. s. d.	£. s. d.	£. s. d.
Maintenance of Lighthouses	55,416 – –	32,169 17 –	25,153 17 9	
Maintenance of Light Vessels	45,153 11 11	13,278 10 1	—	
Maintenance of Bucys and Beacons	8,635 15 8	2,024 18 2	1,891 15 4	
Maintenance of Steam and Sailing Vessels	62,291 13 –	7,009 16 –	9,772 5 3	
Office and House Expenses	6,486 16 3	2,195 11 7	629 – 8	
Salaries of Establishment	18,247 – 5	3,617 15 –	3,759 3 6	
Miscellaneous Expenses	6,867 3 –	3,869 11 4	1,801 6 8	
Charges for Collection	5,319 7 9	986 17 10	507 16 7	
Superannuations of Officers and Clerks	8,230 11 1	1,435 1 1	1,675 7 1	
£.	216,697 19 1	66,537 18 1	45,195 12 10	328,431 10 –
New Works in building Lighthouses, &c. as shown in Statement (A.) in Appendix, page 4	12,030 11 5	4,389 9 –	31,688 8 7	48,108 9 –
				376,589 19 –
MERCANTILE MARINE OFFICES:			£. s. d.	
For Salaries and Expenses at the various Ports in the United Kingdom, as per Account (B.), page 5			84,755 14 10	
For Expenses of Investigations into the conduct of Masters, Mates, &c.			4,650 17 2	
				89,406 12 –
SAVING LIFE:				
For Expenses of Life Boats, Apparatus for Saving Life, and Gratuities for Saving Lives				9,031 17 4
PENSIONS:				
For Pensions granted by the Trinity House Corporation, before 1st October 1853, for year ending March Quarter 1873				1,177 14 5
For Pensions and Superannuation Allowances in respect of Ballastage Service on expiration of the Act 6 & 7 Vict. c. 57				1,767 – 8
CHAIN PROVING ESTABLISHMENT:				
For Expenses of testing Chain Cables, &c. by the Trinity Proving House, under Sect. 12 of the Merchant Shipping Act Amendment Act, 1872				1,320 6 1
EXCHEQUER BILLS:				
Paid for Purchase of Exchequer Bills, as shown on other side				20,184 2 2
				499,477 11 8
Balance in hand on 31st March 1874, as per Statement (C.), page 6				30,329 16 9 / 256,600 – –
			£.	529,807 8 5 / 256,600 – –

R. G. C. Hamilton,
Assistant Secretary.

APPENDIX.

STATEMENT (A.), referred to at page 3.

STATEMENT of the Sums expended for New Works in Building Lighthouses, &c. in the United Kingdom, from 1st April 1873 to 31st March 1874.

Nature of Work.	£. s. d.	£. s. d.
ENGLAND:		
Wolf Rock	731 13 8	
Longships	6,183 – 11	
South Foreland	1,073 16 2	
Hartland Point	2,503 9 5	
Light Vessels, Nos. 46 and 47, to replace Nos. 2 and 4	1,350 8 1	
Caistor Leading Lights	188 3 2	
		12,030 11 5
IRELAND:		
Scattery Island	7 1 9	
Straw Island	99 17 3	
Carlingford	13 19 10	
Pladdy Lug Beacon	89 3 1	
Galley Head	4,089 3 1	
Dunree Head	30 7 10	
New Store at Kingstown	59 16 2	
		4,389 9 –
SCOTLAND:		
Duheartach	287 1 7	
Chickens Rock	9,843 19 9	
Turnberry Head	1,407 17 6	
New Steamer	20,149 9 9	
		31,688 8 7
	£.	48,108 9 –

AN ACCOUNT of the INCOME and EXPENDITURE for Fees received for Examinations of Masters and Mates, for Engaging and Discharging Crews, for Surveys of Steam Vessels, and by Receivers of Wreck, under the Merchant Shipping Act, 1854, for the Year ending 31st March 1874.

FEES: On Examination of Masters and Mates.	FEES: On Engagement of Crews.	FEES: On Discharge of Crews.	FEES: On Renewal of Certificates.	TOTAL INCOME.	OFFICES.	EXPENDITURE: Salaries.	EXPENDITURE: Contingencies.	EXPENDITURE: Gratuities and Superannuation Allowances.	EXPENDITURE: Total Expenditure.	EXCESS OF: Income over Expenditure.	EXCESS OF: Expenditure over Income.
£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
—	—	—	—	—	BOARD OF TRADE (Marine Department)	50 – –	(a) 5,121 6 4	(b) 1,866 3 2	7,037 9 6	– –	7,037 9 6
238 15 –	67 6 6	95 5 –	1 13 –	402 19 6	ABERDEEN	539 – –	183 1 4	– –	722 1 4	– –	319 1 10
148 5 –	164 2 –	234 19 –	2 – –	549 6 –	BELFAST	387 5 9	58 – 11	– –	445 6 8	103 19 4	—
266 5 –	280 10 6	592 8 6	5 8 6	1,144 12 6	BRISTOL	780 – –	191 12 7	– –	971 12 7	172 19 11	—
26 15 –	102 6 –	188 4 –	1 19 6	319 4 6	CORK	336 17 9	199 18 11	– –	536 16 8	– – –	217 12 2
160 – –	128 11 6	247 17 6	1 14 6	538 3 6	DUBLIN	373 – 10	80 18 11	– –	453 19 9	84 3 9	—
323 10 –	269 17 –	422 1 6	4 5 –	1,019 13 6	DUNDEE	726 6 8	70 10 1	– –	796 16 9	222 16 9	—
253 5 –	1,128 14 3	711 1 9	9 15 6	2,102 16 6	GLASGOW	1,447 7 11	278 2 8	– –	1,725 10 7	377 5 11	—
326 5 –	541 16 6	640 19 6	22 2 2	1,531 3 2	GREENOCK	1,027 18 6	269 11 11	– –	1,297 10 5	233 12 9	—
151 5 –	646 19 –	758 12 –	8 6 –	1,565 2 –	HULL	827 8 11	208 – 3	– –	1,035 9 2	529 12 10	—
129 – –	293 15 6	326 17 6	3 10 –	753 3 –	LEITH	432 18 –	87 9 8	– –	520 7 8	232 15 4	—
1,674 – –	6,192 18 –	6,145 19 –	75 5 4	14,088 2 4	LIVERPOOL	7,302 8 3	2,677 3 1	– –	9,979 11 4	4,108 11 –	—
1,160 10 –	2,629 1 6	3,732 8 –	42 16 8	7,564 16 2	LONDON (Hammet-street)	4,886 14 –	3,107 6 8	– –	7,994 – 8	– –	429 4 6
—	1,907 6 6	1,882 11 6	18 15 6	3,808 13 6	,, (Poplar)	1,402 1 10	509 19 7	– –	1,912 1 5	1,896 12 1	—
9 5 –	142 14 –	200 13 6	3 15 6	356 8 –	NEWCASTLE	344 18 10	140 1 8	– –	485 – 6	– –	128 12 6
321 5 –	185 7 –	185 1 –	2 19 6	694 12 6	PLYMOUTH	443 2 10	129 17 11	– –	573 – 9	121 11 9	—
225 10 –	1,269 12 6	418 11 –	6 4 –	1,919 17 6	SHIELDS, NORTH	(c) 1,422 15 1	200 14 11	–	1,623 10 –	296 7 6	—
267 15 –	1,100 2 –	528 9 –	10 14 –	1,907 – –	SHIELDS, SOUTH	856 6 3	217 1 1	– –	1,073 7 4	833 12 8	—
390 15 –	684 19 –	267 12 –	8 5 10	1,351 11 10	SUNDERLAND	1,059 4 4	247 1 5	– –	1,306 5 9	45 6 1	—
30 5 –	5,243 1 –	4,339 14 –	58 5 –	9,671 5 –	MINOR PORTS of the United Kingdom	(d) 6,826 8 8	818 15 10	– –	7,645 4 6	2,026 – 6	—
6,102 10 –	22,979 – 3	21,919 5 3	287 15 6	51,288 11 –	TOTAL £.	31,472 4 5	14,796 15 9	1,866 3 2	48,135 3 4	11,285 8 2	8,132 – 6
				32,824 7 10	Salaries and Expenses of Surveyors and Medical Inspectors				30,121 12 3	3,975 5 7	—
To Fees received for Surveys of Steam Vessels, &c.											
„ Fees, &c. received for Examinations of Engineers				1,272 10 –							
„ Fees for Inspection of Register Books received by Registrar General of Seamen				323 5 –						323 5 –	—
„ Fees for Copies of Documents received by Registrar General of Seamen, &c.				112 7 9						112 7 9	—
				£. s. d.							
„ Fees, &c. received by Receivers of Wreck				3,981 4 7							
„ Sums charged to Wreck and Salvage to meet deficiency				2,507 8 8							
				6,488 13 3	(d) Remuneration to and Contingent Expenses of Receivers of Wreck for the Year ending 31st March 1874				6,488 13 3	—	—
„ Fees received for Engagement and Discharge of Crews, under Circular 575				918 4 –						918 4 –	—
„ Fees, &c. received for Inspection of Seamen				7 10 –	Expenses of Inspection of Seamen				10 6 –	– –	2 16 –
„ Fees, &c. for Examinations in Compass Deviation				8 – –						8 – –	—
TOTAL £.				93,243 8 10	TOTAL £.				84,755 14 10	16,622 10 6	8,134 16 6

£. 8,487. 14. –.

(a) This charge includes a sum of 2,500*l.* paid to Stationery Office for Forms, &c., supplied to the various Mercantile Marine Offices, and likewise a payment of 466*l.* to the Comptroller and Auditor General for auditing the Mercantile Marine Fund Accounts.
(b) This charge is for Pensions, &c., granted to officers at several Local Marine Board Offices.
(c) The salaries of the Joint Examiners for North and South Shields, and Newcastle, are paid at and charged to North Shields, and thus make the expenditure of that port appear larger than it really is.
(d) These amounts include remuneration paid for the Year 1873 to the Officers of Customs who act as Superintendents of Mercantile Marine at the Minor Ports, and as Receivers of Wreck for the additional duties imposed upon them.

STATEMENT (C.), referred to at page 3.

STATEMENT of the BALANCE in Hand on 31st March 1874.

PARTICULARS OF BALANCE.	£. s. d.	CASH. £. s. d.	EXCHEQUER BILLS. £. s. d.
In the hands of Her Majesty's Paymaster General	- -	4,020 19 -	256,600 - -
Orders payable, outstanding	3,719 17 9		
„ receivable, outstanding	3,700 12 2		
		19 5 7	
		4,001 13 5	
In the hands of Superintendents, Mercantile Marine Offices, and Receivers of Wreck	- -	12,887 5 2	
„ „ Trinity House	10,621 9 10		
„ „ Commissioners of Northern Lights	14,753 8 4		
„ „ „ Irish Lighthouses	4,490 17 7		
	29,865 15 9		
Less Transfers from Light Dues	2,705 - -		
		27,160 15 9	
In the hands of Gas Referees	- -	69 3 -	
„ „ City of London Gas Companies	- -	23 7 7	
„ „ Chief Surveyor	- -	25 - -	
Advanced on account of Harbours, &c. under Board of Trade	21 12 10		
„ „ Lighthouses Abroad	8,583 13 1		
„ „ Board of Trade	519 12 3		
„ „ Relief of Distressed Seamen	898 6 5		
„ „ Dues, Merchant Shipping Act, &c.	5,108 17 2		
„ „ Hog Island Lighthouse	34 - 8		
„ „ Royal Naval Volunteers	1,929 12 5		
„ „ Expenses of Trial in *re* "Athenais"	47 17 9		
„ „ Advertisements	430 16 6		
„ „ Civil Contingencies	51 17 -		
		17,626 6 1	
		61,793 11 -	
DEDUCT,			
For amount due to Governor General of Canada	103 17 1		
„ „ Postal Services	2 2 5		
„ „ Commissioners of Inland Revenue	292 14 5		
„ „ Wages and Effects of Deceased Seamen	781 - 1		
„ „ Ramsgate Harbour Fund	507 14 2		
„ „ Extra Receipts	176 14 1		
„ „ Fines and Forfeitures	549 14 7		
„ „ Suspense Account	1,046 17 2		
„ „ Oyster Fisheries	59 14 1		
„ „ Crown Lands	1,043 16 9		
„ „ Harbour Works, Wexford	16 16 -		
„ „ Japanese Lighthouses	2,056 4 3		
„ „ Wreck and Salvage	19,923 5 11		
„ „ Money Orders	2,480 11 3		
„ „ Seamen's Savings Bank and Seamen's Temporary Deposit Bank	1,000 18 9		
„ „ Greenwich Sixpences Pension Fund	1,269 17 11		
„ „ Tornado Claims	151 15 4		
		31,463 14 3	
	£.	30,329 16 9	256,600 - -

MERCANTILE MARINE FUND (1873-4).

1873-4.

AN ACCOUNT of the MERCANTILE MARINE FUND, under the Act 17 & 18 Vict. c. 104, showing the BALANCE of CASH and AMOUNT of EXCHEQUER BILLS held on 31 March 1873, with the INCOME and EXPENDITURE from that Date to 31 March 1874.

(Presented pursuant to Act of Parliament.)

Ordered, by The House of Commons, *to be Printed,*
11 *February* 1875.

Under 1 *oz.*

MERCANTILE MARINE OFFICES.

RETURN to an Order of the Honourable The House of Commons, dated 5 March 1875;—*for*,

COPY "of MEMORANDUM upon recent Improvements effected by the direction of the Board of Trade in the Working Arrangements of MERCANTILE MARINE OFFICES, and of REPORTS of the Police Officers employed for the Protection of SEAMEN from CRIMPS at *Gravesend*, and in the Port of *London*, during the Month of January last."

Board of Trade, 22nd March 1875.

T. H. FARRER.

MEMORANDUM upon recent Improvements effected by the direction of the Board of Trade in the Working Arrangements of MERCANTILE MARINE OFFICES.

THE attention of the Board of Trade has of late been directed to the improvement of the Mercantile Marine Offices.

In 1872 they appointed certain of their officers to join with members of the Local Marine Board of London in planning out and fitting up a new Mercantile Marine Office for the Port of London, in place of the existing ill-contrived offices. This resulted in considerable improvements in the office arrangements in connection with the Seamen's Savings Bank and Money Orders, in the Engagement and Discharge Offices, and in the waiting accommodation for seamen. The plans then designed have since been adopted at Liverpool, and are in course of application at other ports, at certain of which alterations have already been commenced, or are in contemplation, *i.e.*, Bristol, Southampton, Newport, Cardiff, Swansea, &c.

Seamen have been largely benefited by these measures, in that they have been provided with capacious waiting rooms whilst seeking employment, a more orderly and rapid system of engagement and discharge, and greater facilities for investing in the Seamen's Money Orders and Savings Banks before they quit the discharge rooms and fall under the influence of crimps and low characters.

Whilst these advantages have, at very considerable cost, been accorded to seamen, the Board have not been unmindful of the interests of shipowners and masters. The Board have, accordingly, brought into the closest possible proximity to the Mercantile Marine Offices the offices of the Surveyors and the Emigration Officers, so that the time of the shipowner and his assistants is no longer wasted by going into different localities for one and the same object. The time of owners and shipmasters will be materially economised also in consequence of the before-mentioned improvements in the Shipping and Discharge Offices through the opportunities which seamen have to collect and remain at the Mercantile Marine Offices, instead of loitering about in the neighbouring streets and public-houses.

At certain ports officers have been appointed as runners, to collect, as far as possible, the crews of outward-bound ships, and to assist in apprehending, though not in prosecuting, men who fail to join.

In London a much more extensive effort has been made, and a staff of police is now employed upon the river in boarding home ward-bound vessels for the purpose of ejecting crimps and touters, and in boarding outward-bound vessels in order to insure compliance with the law when substitutes are engaged. The effect of this action, in the case of homeward-bound vessels, may be seen by reference to the following statement :—

DATE.	Number of Vessels boarded.	Number of Cases in which Crimps were found on board.	Cases in which no Crimps were seen.	Cases in which Crimps came alongside, but on seeing Police present, made no attempt to go on board.
1868 : January to June - - -	506	130	- -	376
1874 : January to June - - -	503	*4	128	371

* Two convictions obtained.

In one very recent case (the "Chacma") the police report that the captain was informed that a crimp was on board, and asked if he had permission to remain. The captain said "Yes," and stated that he did not require the services of the police. Subsequently, when the ship got into dock, she was crowded to excess with crimps, harpies, and others of the lowest grade. This would have been prevented had the constable been allowed to remain by the ship until she was moored.

In furtherance of these measures, the Board have under construction a steam launch which will shortly be stationed on the river, and they have it in contemplation to appoint the master as deputy superintendent, in order that masters of steam ships and others outward bound, to whom time is of considerable importance, may have the opportunity of complying with the law without the delay of proceeding on shore.

In 1869 facilities were given for the engagement and discharge of crews of British ships abroad. It had been found that the practice of engaging and discharging whole crews out of the United Kingdom had been considerably on the increase, and the Board, anxious that no unnecessary impediment should be placed in the way of commerce and shipping, issued regulations to meet this altered state of things, under which it is believed that all the rights and advantages secured to masters and seamen through the intervention of the Mercantile Marine Offices in the United Kingdom are obtained abroad. In the same direction the Board have recently made arrangements for the engagement and discharge of crews on board their vessels in cases in which these operations can take place at one and the same time, and in which a considerable proportion of the crew discharged from one voyage proceed on the next.

Marine Department, Board of Trade,
22 February 1875.

G. J. S.

METROPOLITAN POLICE.—THAMES DIVISION.

REPORT of the Proceedings of the Officers of the THAMES POLICE, employed at the instance of the BOARD OF TRADE, for the purpose of affording SEAMEN Protection from CRIMPS in the Port of *London*, during the Month of January 1875.

	Name of Ship.	Where from.	Date.	Where Boarded.	By whom.	REMARKS.
1	Woodbine - -	Demerara - -	1 Jan. 1875	West India Dock Entrance.	Police Constable 41 -	No crimps there as the ship passed in.
2	Red Riding Hood	Shanghae - -	1 Jan. „	S. West India Dock Entrance.	Inspector Loft and Police Constable 41.	John Hoy, boarding-house runner, was at the entrance as the ship passed in, but made no attempt to get on board.
3	Clan Alpine -	Cocanada - -	2 Jan. „	St. Katherine's Dock Entrance.	Inspector Loft -	No crimps afloat. Several runners were at the docks as the ship passed in, but made no attempt to get on board.
4	Phaeton - -	Iquique - -	2 Jan. „	St. Katherine's Docks	- - ditto - -	- ditto - - ditto.
5	Clodian - -	Colombo - -	2 Jan. „	Off S. West India Docks.	Police Constable 104	J. Whalen, J. Riley, and Thomas Harney, boarding-house runners, were present, but did not get on board.
6	Balkamah - -	Calcutta - -	2 Jan. „	Blackwall Buoys -	Police Constable 71 -	Several boarding-house-keepers and tailors were afloat, but made no attempt to get on board.
7	Glenfalloch - -	China - -	2 Jan. „	S. West India Dock Entrance.	Police Constable 104	No crimps present at the dock as the ship passed in.
8	Undine - -	Foochowfoo -	4 Jan. „	Off Woolwich, towed to London Docks.	Police Constable 71 -	William Turner, boarding-master, allowed on board by the 2nd Officer.
9	Cowden Castle -	Foochowfoo -	4 Jan. „	Off Charlton, towed to East India Docks.	Police Constable 41 -	No crimps present.
10	Maxted - -	Iquique - -	5 Jan. „	Blackwall - -	Inspector Loft and boat's crew.	- - ditto.
11	Lord of the Isles -	West India and New York.	5 Jan. „	Woolwich Reach -	- ditto - ditto -	- - ditto.
12	Golden Fleece -	Calcutta and New York.	5 Jan. „	Woolwich Reach -	- ditto - ditto -	- - ditto.
13	Sing Tai - -	Hong Kong -	5 Jan. „	Gallion's Reach, towed to London Docks.	Police Constable 104	No crimps afloat. Several boarding-housekeepers in the dock, names unknown.
14	Athena - -	Madras - -	5 Jan. „	Off Charlton, towed to S. West India Docks.	Police Constable 71 -	John Burns, J. Tucker, Nathaniel Harris, and J. Cole, boarding-house-masters, were present when the ship passed in, but made no attempt to get on board.
15	Hannibal - -	Bassien - -	5 Jan. „	Off Blackwall -	Inspector Loft and Police Constable 41.	No crimps present.
16	Wylo - - -	China - - -	5 Jan. „	Off Blackwall, towed to East India Docks.	Inspector Loft -	John Thomson, F. Johnson, and Thomas Drew, boarding-house masters, were in the dock, made no attempt to get on board.

METROPOLITAN POLICE.—THAMES DIVISION—*continued.*

	Name of Ship.	Where from.	Date.	Where Boarded.	By whom.	REMARKS.
17	Threepwood -	Tuticorin - -	6 Jan. 1875	Charlton, towed to St. Katherine's.	Police Constable 41 -	No crimps present.
18	Harkaway - -	China and New York.	6 Jan. „	Off Woolwich -	Inspector Loft -	- - ditto.
19	Kosinsko - -	Melbourne - -	6 Jan. „	West India Docks -	Police Constable 71 -	- - ditto.
20	Borealis - -	Shanghae - -	6 Jan. „	- - ditto - -	Inspector Loft -	- - ditto.
21	Greenock - -	West Indies -	7 Jan. „	Off Charlton, towed to West India Docks.	- - ditto - -	- - ditto.
22	Pilgrim - -	West Indies -	7 Jan. „	West India Docks -	Inspector Loft and boat's crew.	John Burns, Robert Fin Luke Burke, and Th mas Harney, boardin house masters, were the dock entrance, b did not attempt to g on board.
23	Duke of Abercorn	Shanghae - -	7 Jan. „	Blackwall Reach, towed to London Docks.	Police Constable 71 -	Several boarding-hou runners were at the doc entrance, but made attempt to get on boar
24	Enoch Train -	New York - -	7 Jan. „	Victoria Docks -	Police Constable 41 -	No crimps present.
25	Goldfinder - -	Quebec - -	8 Jan. „	Off Charlton -	Inspector Loft and boat's crew.	Nathaniel Harris, Jam Whalen, James Jone and John Cole, boardin house runners, we afloat, but made no a tempt to get on board.
26	Times - -	Bahia - - -	8 Jan. „	- - ditto - -	- ditto - ditto -	Nathaniel Harris, Jam Whalen, James Jone and John Cole, boarding house masters and ru ners, were afloat, bu made no attempt to g on board.
27	Daphne - -	Calcutta and New York.	8 Jan. „	Off Charlton - -	- ditto - ditto -	No crimps present.
28	Mary Hick - -	Colombo - -	9 Jan. „	Woolwich Reach -	Police Constable 41 -	Nathaniel Harris, Jam Whalen, James Jone and John Cole, boarding house masters and ru ners, were afloat, bu made no attempt to g on board.
29	Lizzie Iredale -	Manila - -	10 Jan. „	Off Woolwich, towed to West India Docks.	Police Constable 104	No crimps present.
30	Auriga - -	Shanghae - -	10 Jan. „	Off Woolwich - -	Inspector Loft and boat's crew.	- - ditto.
31	Lencadia - -	New Zealand -	10 Jan. „	Off Blackwall, towed to London Docks.	Inspector Loft -	- - ditto.
32	Madeline - -	Demerara - -	11 Jan. „	Off Blackwall -	Inspector Loft and boat's crew.	- - ditto.
33	Alexandra - -	Singapore - -	11 Jan. „	Gallion's Reach, towed to East India Docks.	Police Constable 71 -	- - ditto.
34	Tynedale - -	Singapore - -	11 Jan. „	Woolwich Reach, towed to West India Docks.	Police Constable 104	John Burns, John Cole and George Partlett boarding-house masters were in the dock as the ship passed in, but made no attempt to get on board.
35	- - - -	Adelaide - -	11 Jan. „	Woolwich Reach, towed to London Docks.	Inspector Loft -	Several crimps were in boats in Limehouse Reach; on seeing the police, made no attempt to get on board.

METROPOLITAN POLICE.—THAMES DIVISION—*continued.*

	Name of Ship.	Where from.	Date.	Where Boarded.	By whom.	REMARKS.
36	Bundaleer - -	Adelaide - -	12 Jan. 1875	Gallion's Reach, towed to London Docks.	Police Constable 41 -	No crimps present.
37	La Hogue - -	Sydney - -	13 Jan. „	Blackwall Reach, towed S. West India Docks.	Police Constable 71 -	William Turner, Luke Michales, and Peter Peterson, boarding-house masters, were at the dock entrance; on seeing the police, made no attempt to get on board.
38	Lady Palmerston -	Calcutta - -	14 Jan. „	Woolwich Reach -	Inspector Loft and boat's crew.	J. Cole, J. Whalen, Nathaniel Harris, and William Tozer, boarding-house masters, were hovering about the ship, but made no attempt to get on board.
39	Royal George -	Calcutta - -	14 Jan. „	Woolwich Reach -	- ditto - ditto.	No crimps present.
40	Mary - - -	Mauritius - -	14 Jan. „	Off Charlton, towed to West India Docks.	Police Constable 41 -	- - ditto.
41	Cuyuni - -	Demerara - -	14 Jan. „	West India Docks -	- - ditto - -	- - ditto.
42	Norwood - -	Cocanada - -	14 Jan. „	Woolwich Reach -	Inspector Loft and boat's crew.	- - ditto.
43	Sunderdale - -	Shanghae - -	14 Jan. „	Woolwich Reach, towed to East India Docks.	Police Constable 104	H. Campbell, J. Hicks, P. Welch, J. Riely, and Luke Lewis, boarding-house runners, were at the dock, but made no attempt to get on board.
44	Sea Breeze - -	Mauritius - -	14 Jan. „	Off Charlton, towed to West India Docks.	Inspector Loft -	No crimps present.
45	City of Aberdeen	Brisbane - -	15 Jan. „	Off East India Docks	Police Constable 104	- - ditto.
46	Athene - -	Kurrachee - -	15 Jan. „	East India Docks -	- - ditto - -	- - ditto.
47	Oriana - -	Calcutta - -	15 Jan. „	S. West India Docks	Police Constable 41 -	Thomas Hearney, H. Campbell, William Burns, J. Hicks, and Peter Peterson, boarding-house masters, were at the dock entrance, but made no attempt to get on board.
48	Peacemaker -	Bimlipatam -	16 Jan. „	Blackwall Reach, towed to London Docks.	Inspector Loft -	Three crimps were towing alongside the ship, viz., J. Davies, G. Varley, the other unknown. I was informed by the captain that they had towed from Greenhithe. On seeing the police they left the vessel.
49	William Miles -	Trixillo - -	16 Jan. „	Blackwall Reach -	Police Constable 41 -	No crimps present.
50	Ella Nichol -	Cocanada - -	18 Jan. „	Blackwall Reach, towed to S. West India Docks.	- - ditto - -	- - ditto.
51	Star of Greece -	Calcutta - -	18 Jan. „	East India Docks -	Police Constable 104	Hugh Campbell, P. Welch, C. Collins, W. Burns, Nathaniel Harris, Thomas Harney, Robert Flym, W. Turner, P. Peterson, Thomas Moss, J. Davies, J. Mercus, Thomas Drew, William Tozer, John Magnus, and L. Burke, boarding-house masters, runners, &c., were at the docks, but made no attempt to board any of the ships.

METROPOLITAN POLICE.—THAMES DIVISION—*continued.*

	Name of Ship.	Where from.	Date.	Where Boarded.	By whom.	REMARKS.
52	Warren Hastings	Mauritius	18 Jan. 1875	Blackwall Reach, towed to West India Docks.	Inspector Loft	Hugh Campbell, P. Welch, C. Collins, W. Burns, Nathaniel Harris, Thomas Harney, Robert Flym, W. Turner, P. Peterson, Thomas Moss, J. Davies, J. Mercus, Thomas Drew, William Tozer, John Magnus, and L. Burke, boarding-house masters, runners, &c., were at the docks, but made no attempt to board any of the ships.
53	Eliza Shaw	China	19 Jan. „	Woolwich Reach, towed to East India Docks.	Police Constable 71	ditto ditto.
54	Alfred the Great	Cochin	20 Jan. „	Woolwich Reach, towed to West India Docks.	Police Constable 104	ditto ditto.
55	Nimrod	Moulmein	20 Jan. „	Blackwall, towed to S. West India Docks.	Inspector Loft and Police Constable 71.	ditto ditto.
56	Miltiades	Melbourne	21 Jan. „	S. West India Docks	Police Constable 71	William Burns, J. Jones, J. Magnus, L. Burke, William Tozer, William Turner, Richard Green, P. Peterson, Thomas Thompson, W. Turner, and Thomas Drew, boarding-house masters, &c., were at the docks, but made no attempt to get on board.
57	Rosedale	Callao	21 Jan. „	West India Docks	Inspector Loft and Police Constable 41.	ditto ditto.
58	Hawkesbury	China	21 Jan. „	London Docks	Police Constable 104	ditto ditto.
59	Ramsey	Brisbane	22 Jan. „	Woolwich Reach, towed to East India Docks.	Inspector Loft and Police Constable 71.	ditto ditto.
60	Melbrek	Whampoo	22 Jan. „	Blackwall, towed to West India Docks.	Police Constable 104	ditto ditto.
61	Ethiopian	Sydney	23 Jan. „	East India Docks	Inspector Loft and Police Constable 71.	ditto ditto.
62	Margaret Smith	Demerara	23 Jan. „	Blackwall	Inspector Loft and boat's crew.	No crimps present.
63	Mayola	Bathurst	23 Jan. „	West India Docks	Police Constable 41	ditto.
64	Khimjee Oodowjee	Madras	23 Jan. „	Blackwall Reach, towed to London Docks.	Inspector Loft	Hugh Campbell, Nathaniel Harris, J. Cole, George Varley, J. Davies, and Luke Davies, boarding-house masters and runners, were at the docks, but made no attempt to get on board.
65	Cora Linn	Sarawak	24 Jan. „	West India Docks	Police Constable 41	ditto ditto.
66	China	Sydney	24 Jan. „	London Docks	Police Constable 71	ditto ditto.

METROPOLITAN POLICE.—THAMES DIVISION—*continued.*

	Name of Ship.	Where from.	Date.	Where Boarded.	By whom.	REMARKS.
67	Chacma - -	Colombo - - Gallichan, master.	24 Jan. 1875	West India Docks -	Police Constable 104, R. Bruce.	Police Constable 104, R. Bruce, states in his report that he informed Captain Gallichan of a crimp, John Enever, being on board, and asked if had permission to remain. The captain said "yes," and he did not require the services of the police. Subsequently when the ship got in dock she was crowded to excess with crimps, harpies, and others of the lowest grade. This would have been prevented had the constable been allowed to remain by the ship until she was moored.
68	Offerton - -	Iquique - -	26 Jan. „	Blackwall Reach -	Inspector Loft and boat's crew.	No crimps present.
69	Forfarshire - -	Calcutta - -	26 Jan. „	Off Charlton - -	Inspector Loft and crew.	- - ditto.
70	General Caulfield	Concanada - -	26 Jan. „	Woolwich Reach, towed to East India Docks.	Inspector Loft and Police Constable 104.	- - ditto.
71	Macduff - -	Melbourne - -	26 Jan. „	Blackwall Reach, towed to London Docks.	Inspector Loft -	W. Burns, G. Williams, J. Cole, H. Campbell, G. Varley, J. Davies, Thomas Walters, and J. Jones, boarding-house masters and runners, went alongside. Upon seeing the police they left.
72	Janie Douglas -	Calcutta - -	26 Jan. „	Blackwall - -	Police Constable 71	- ditto - - ditto.
73	Oriflamme - -	Calcutta - -	27 Jan. „	Woolwich Reach -	Inspector Loft and crew.	- ditto - - ditto.
74	Gertrude - -	Tuticorin - -	27 Jan. „	- - ditto - -	- ditto - ditto -	- ditto - - ditto.
75	Amber Witch -	Demerara - -	28 Jan. „	Gallion's Reach, towed to London Docks.	Police Constable 104	No crimps present.
76	Don Guillermo -	Iquique - -	30 Jan. „	Woolwich Reach, towed to West India Docks.	Police Constable 41 -	- - ditto.
77	Plover - - -	Demerara - -	31 Jan. „	London Dock - -	Inspector Loft -	- - ditto.
78	Lock Tay - -	Melbourne - -	31 Jan. „	- - ditto - -	Police Constable 41 -	- - ditto.
79	City of Seringapatam.	Melbourne - -	31 Jan. „	- - ditto - -	Inspector Loft -	Several boarding-house masters were in the docks, but made no attempt to get on board.
80	Oberon - -	Melbourne - -	31 Jan. „	East India Docks -	Police Constable 71 -	- ditto - - ditto.
81	Hesperus - -	Adelaide - -	31 Jan. „	S. West India Docks	Police Constable 104	- ditto - - ditto.
82	Arundel Castle -	Calcutta - -	31 Jan. „	- - ditto - -	- - ditto - -	No crimps present.
83	Corinth - -	Launceston - -	31 Jan. „	Blackwall - -	Inspector Loft -	- - ditto.

W. Alstin, Superintendent.

THAMES DIVISION.—GRAVESEND.

HOMEWARD BOUND SHIPS.

RETURN of Homeward Bound Ships Boarded during the Month of January 1875.

	Name of Ship.	Where from.	Date.	By whom Boarded.	Remarks.
1	Phaeton	Iquique	1 Jan. 1875	Police Constables 18, 89, and 97.	No crimps.
2	Balkamah	Calcutta	1 Jan. „	ditto ditto	ditto.
3	Red Riding Hood	Shanghai	1 Jan. „	ditto ditto	ditto.
4	Clan Alpine	Cocanada	1 Jan. „	ditto ditto	ditto.
5	Clodian	Colombo	1 Jan. „	ditto ditto	ditto.
6	Athena	Madras	4 Jan. „	Police Constables 89 and 97.	ditto.
7	Steam Ship Greece	New York	4 Jan. „	Inspector Hill, and Police Constables 89 and 97.	ditto.
8	Golden Fleece	Calcutta and New York	4 Jan. „	ditto ditto	ditto.
9	Hannibal	Bassein	4 Jan. „	ditto ditto	ditto.
10	Norham Castle	Shanghai	4 Jan. „	ditto ditto	ditto.
11	Newcastle	Melbourne	5 Jan. „	Inspector Hill, and Police Constables 18 and 89.	ditto
12	Point	Jamaica	5 Jan. „	ditto ditto	ditto.
13	Wylo	Shanghai	5 Jan. „	ditto ditto	ditto.
14	Threepwood	Tuticorin	5 Jan. „	ditto ditto	ditto.
15	Webfoot	Madras	5 Jan. „	ditto ditto	John Enever, a tailor's runner of Gravesend, attempted to board in North Fleet Hope, but on seeing the police on board, went away.
16	Harkaway	Manila and New York	5 Jan. „	ditto ditto	No crimps.
17	Duke of Abercorn	Shanghai	6 Jan. „	Inspector Hill, and Police Constables 18 and 97.	ditto.
18	Daphne	Calcutta and New York	7 Jan. „	Inspector Hill, and Police Constables 18, 89, and 97.	ditto.
19	Times	Bahia	8 Jan. „	ditto ditto	ditto.
20	Mary Hick	Colombo	9 Jan. „	ditto ditto	ditto.
21	Crystal	Berbice	9 Jan. „	ditto ditto	ditto.
22	Dunloe	Bull River	10 Jan. „	ditto ditto	ditto.
23	Lizzie Iredale	Manila	10 Jan. „	ditto ditto	ditto.
24	Auriga	New Zealand	10 Jan. „	ditto ditto	ditto.
25	Leucadia	Shanghai	10 Jan. „	ditto ditto	ditto.
26	Goolwa	Adelaide	10 Jan. „	ditto ditto	ditto.
27	Madeline	Demerara	11 Jan. „	Police Constables 18, 89, and 97.	ditto.
28	Alexandra	Singapore	11 Jan. „	ditto ditto	ditto.
29	Tyndale	Singapore	11 Jan. „	ditto ditto	ditto.
30	Bundaleer	Adelaide	11 Jan. „	ditto ditto	ditto.
31	La Hogue	Sydney	12 Jan. „	Inspector Hill, and Police Constables 18, 89, and 97.	ditto.
32	Royal George	Calcutta	14 Jan. „	ditto ditto	ditto.
33	Lauderdale	Shanghai	14 Jan. „	ditto ditto	ditto.
34	Norwood	Bimlipatam	14 Jan. „	ditto ditto	ditto.
35	Guiguni	Demerara	14 Jan. „	Police Constables 18, 89, and 97.	ditto.
36	Mary	Mauritius	14 Jan. „	Inspector Hill, and Police Constables 18, 89, and 97.	ditto.
37	Lady Palmerston	Calcutta	14 Jan. „	ditto ditto	ditto.
38	Sea Breeze	Mauritius	14 Jan. „	ditto ditto	ditto.
39	Cambridge	Demerara	14 Jan. „	Police Constables 18, 89, and 97.	ditto.

THAMES DIVISION.—GRAVESEND.—HOMEWARD BOUND SHIPS—*continued.*

	Name of Ship.	Where from.	Date.	By whom Boarded.	REMARKS.
40	Oriana	Calcutta	14 Jan. 1875	Inspector Hill, and Police Constables 18, 89, and 97.	No crimps.
41	City of Aberdeen	Brisbane	14 Jan. ,,	- ditto - ditto - -	- ditto.
42	Athene	Kurrachee	15 Jan. ,,	- ditto - ditto - -	- ditto.
43	Peacemaker	Bimlipatam	15 Jan. ,,	- ditto - ditto - -	- ditto.
44	William Miles	Truxillo	16 Jan. ,,	Police Constables 18, 89, and 97.	- ditto.
45	Star of Greece	Calcutta	18 Jan. ,,	Inspector Hill, and Police Constables 89 and 97.	- ditto.
46	Nimroud	Moulmein	19 Jan. ,,	Inspector Hill, and Police Constables 18 and 89.	- ditto.
47	Miltiades	Melbourne	20 Jan. ,,	Inspector Hill, and Police Constables 18, 89, and 97.	- ditto.
48	Elmston	Manila and New York	20 Jan. ,,	- ditto - ditto - -	- ditto.
49	Derwent	Manila and New York	20 Jan. ,,	- ditto - ditto - -	- ditto.
50	Hallowe'en	Shanghai	20 Jan. ,,	- ditto - ditto - -	- ditto.
51	Amulatio	Jamaica	20 Jan. ,,	- ditto - ditto - -	- ditto.
52	Hawkesbury	Foochowfoo	21 Jan. ,,	- ditto - ditto - -	- ditto.
53	Beltana	Adelaide	21 Jan. ,,	Police Constables 18, 89, and 97.	- ditto.
54	Ramsey	Brisbane	22 Jan. ,,	Inspector Hill, and Police Constables 18, 89, and 97.	- ditto.
55	Melbrek	Whampoa	22 Jan. ,,	Police Constables 18, 89, and 97.	- ditto.
56	Ethiopian	Sydney	23 Jan. ,,	Inspector Hill, and Police Constables 18, 89, and 97.	Nathaniel Harris, a tailor, of London, and two runners, hovering round but did not get on board.
57	Khimjee Oodowjee	Madras	23 Jan. ,,	- ditto - ditto - -	- ditto.
58	Margaret Smith	Demerara	23 Jan. ,,	- ditto - ditto - -	No crimps.
59	Mayola	Bathurst	23 Jan. ,,	- ditto - ditto - -	- ditto.
60	Chacma	Colombo	23 Jan. ,,	- ditto - ditto - -	John Enever, a tailor's runner, allowed on board by permission of the chief officer.—[Reported on by the police stationed in London.]
61	Cora Linn	Sarawak	23 Jan. ,,	- ditto - ditto - -	No crimps.
62	China	Sydney	23 Jan. ,,	- ditto - ditto - -	- ditto.
63	Thyatira	Foochowfoo	23 Jan. ,,	- ditto - ditto - -	- ditto.
64	Offerton	Iquique	25 Jan. ,,	- ditto - ditto - -	- ditto.
65	General Caulfield	Cocanada	26 Jan. ,,	- ditto - ditto - -	- ditto.
66	Forfarshire	Calcutta and New York	26 Jan. ,,	- ditto - ditto - -	- ditto.
67	Macduff	Melbourne	26 Jan. ,,	- ditto - ditto - -	- ditto.
68	Jeanie Douglas	Calcutta	26 Jan. ,,	- ditto - ditto - -	- ditto.
69	Oriflamme	Calcutta	26 Jan. ,,	Inspector Hill, and Police Constables 18 and 89.	- ditto.
70	Gertrude	Tuticorin	27 Jan. ,,	Inspector Hill, and Police Constables 18, 89, and 97.	- ditto.
71	Amberwitch	Demerara	28 Jan. ,,	Police Constables 18, 89, and 97.	- ditto.
72	Artemisia	Jamaica	28 Jan. ,,	Inspector Hill, and Police Constables 18, 89, and 97.	- ditto.
73	S. S. Eldorado	Calcutta	29 Jan. ,,	- ditto - ditto - -	- ditto.
74	Don Guillermo	Iquique and New York	30 Jan. ,,	Inspector Hill, and Police Constables 18 and 89.	- ditto.
75	Star of Persia	Calcutta	31 Jan. ,,	Inspector Hill, and Police Constables 18 and 97.	- ditto.
76	Arundel Castle	Calcutta and New York	31 Jan. ,,	- ditto - ditto - -	- ditto.
77	Corinth	Brisbane	31 Jan. ,,	- ditto - ditto - -	- ditto.
78	Outalpa	Adelaide	31 Jan. ,,	- ditto - ditto - -	- ditto.

Thames Division, Gravesend,
31 January 1875.

Isaac Hill, Inspector.
W. Alstin, Superintendent.

THAMES DIVISION.—GRAVESEND.

OUTWARD BOUND SHIPS.

RETURN of Outward Bound Ships Boarded during the Month of January 1875.

	Name of Ship.	Where Bound.	Date.	Where Boarded.	By whom Boarded.	Remarks.
1	Tintern Abbey	New Zealand	3 Jan. 1875	Gravesend	Police Constables 18, 89, and 97.	Remained moored off. All correct.
2	Lavinia	Brisbane	3 Jan. „	Powder Buoys	ditto	All correct.
3	Alexandrovna	Sydney	7 Jan. „	ditto	Inspector Hill, and Police Constables 18, 89, and 97.	ditto.
4	City of Calcutta	Melbourne	7 Jan. „	ditto	ditto	ditto.
5	Killochan	Melbourne	7 Jan. „	Gravesend	ditto	ditto.
6	City of Quebec	Montreal	7 Jan. „	ditto	ditto	Remained moored off. All correct.
7	Lady Turner	Cape Town	8 Jan. „	ditto	ditto	ditto.
8	William Davie	New Zealand	8 Jan. „	ditto	ditto	ditto.
9	Queensberry	Colombo	9 Jan „	Powder Buoys	ditto	ditto.
10	Harrowby	Monte Video	9 Jan. „	ditto	ditto	ditto.
11	Sea Star	Sydney	9 Jan. „	Gravesend	ditto	ditto.
12	Agamemnon	Melbourne	10 Jan. „	ditto	ditto	ditto.
13	Kingdom of Italy	New Zealand	10 Jan. „	ditto	ditto	ditto.
14	Mystery	New Zealand	10 Jan. „	ditto	ditto	ditto.
15	Eudora	East London	10 Jan. „	ditto	ditto	ditto.
16	Clymping	Adelaide	13 Jan. „	Powder Buoys	ditto	All correct.
17	Lammermuir	Sydney	14 Jan. „	Gravesend	ditto	Four of the crew refused duty; on police going on board, returned to work.
18	Palmyra	Madras	15 Jan. „	ditto	ditto	Remained moored off. All correct.
19	Frederica	Falkland Islands	16 Jan. „	ditto	Police Constables 18, 89, and 97.	ditto.
20	Isipingo	Port Natal	16 Jan. „	ditto	ditto	ditto.
21	Dundee	Jamaica	16 Jan. „	ditto	ditto	ditto.
22	Silome	Brisbane	16 Jan. „	Powder Buoys	ditto	ditto.
23	Saint Marnock	Calcutta	18 Jan. „	Gravesend	Inspector Hill, and Police Constables 89 and 97.	ditto.
24	Andes	Valparaiso	18 Jan. „	Powder Buoys	ditto	ditto.
25	Andrew Reid	New Zealand	18 Jan. „	ditto	ditto	ditto.
26	Stirlingshire	Adelaide	21 Jan. „	ditto	Police Constables 18, 89, and 97.	ditto.
27	Sepia	Brisbane	21 Jan. „	Gravesend	ditto	ditto.
28	S. S. Hindoo	Calcutta	21 Jan. „	ditto	Inspector Hill, and Police Constables 18, 89, and 97.	ditto.
29	Durham	Melbourne	22 Jan. „	ditto	ditto	ditto.
30	Emily McLaren	New Zealand	22 Jan. „	Powder Buoys	ditto	ditto.

THAMES DIVISION.—GRAVESEND.—OUTWARD BOUND SHIPS—*continued.*

	Name of Ship.	Where Bound.	Date.	Where Boarded.	By whom Boarded.	REMARKS.
31	Whitehall	Sydney	22 Jan. 1875	Gravesend	Inspector Hill, and Police Constables 18, 89, and 97.	Remained moored off. All correct.
32	Lothair	Sydney	22 Jan. „	ditto	ditto ditto	All correct.
33	Ethels	Nassau	24 Jan. „	ditto	Police Constables 18, 89, and 97.	Remained moored off. All correct.
34	Nelson	Melbourne	24 Jan. „	Powder Buoys	ditto ditto	All correct.
35	Cicero	New Zealand	24 Jan. „	Gravesend	ditto ditto	Remained moored off. All correct.
36	Dunmore	New Zealand	26 Jan. „	ditto	Inspector Hill, and Police Constables 18, 89, and 97.	ditto ditto.
37	Lois	Cape Town	26 Jan. „	Powder Buoys	ditto ditto	All correct.
38	John Byers	Madras	26 Jan. „	ditto	ditto ditto	ditto.
39	Balgownie	Hong Kong	26 Jan. „	ditto	ditto ditto	ditto.
40	Ann Duthie	Sydney	27 Jan. „	Gravesend	ditto ditto	Remained moored off. All correct.
41	Sydney Eggers	Calcutta	27 Jan. „	ditto	ditto ditto	All correct.
42	Triune	Cape of Good Hope	28 Jan. „	ditto	ditto ditto	Remained moored off. All correct.
43	British Envoy	Sydney	28 Jan. „	ditto	ditto ditto	ditto ditto.
44	Emma Sims	Adelaide	28 Jan. „	ditto	ditto ditto	ditto ditto.
45	Zehlima	Penang	28 Jan. „	ditto	ditto ditto	ditto ditto.
46	Pactolus	St. Kitts	28 Jan. „	ditto	ditto ditto	All correct.
47	Olive Branch	Mauritius	28 Jan. „	Powder Buoys	ditto ditto	ditto.
48	Thornton	Cape of Good Hope	28 Jan. „	ditto	ditto ditto	ditto.
49	Almora	Zanzibar	29 Jan. „	Gravesend	ditto ditto	Remained moored off. All correct.
50	Queen of the North	Algoa Bay	29 Jan. „	ditto	ditto ditto	ditto ditto.
51	Kamehamoha 4th	Sydney	29 Jan. „	Powder Buoys	ditto ditto	All correct.
52	Eurus	West Indies	30 Jan. „	ditto	Inspector Hill, and Police Constables 18 and 89.	ditto.
53	James Davidson	Berbice	30 Jan. „	Gravesend	ditto ditto	ditto.
54	Hannah and Mary	Buenos Ayres	30 Jan. „	ditto	ditto ditto	ditto.
55	Princess of Wales	West Indies	30 Jan. „	ditto	ditto ditto	Assisted the borough police to take into custody six of the crew, charged on a warrant with refusing duty.

Isaac Hill, Inspector.
W. Alstin, Superintendent.

Thames Division, Gravesend,
31 January 1875.

MERCANTILE MARINE OFFICES.

COPY of MEMORANDUM upon recent Improvements effected by the direction of the Board of Trade in the Working Arrangements of MERCANTILE MARINE OFFICES, and of REPORTS of the Police Officers employed for the Protection of SEAMEN from CRIMPS at *Gravesend*, and in the Port of *London*, during the Month of January last.

(*Sir Charles Adderley.*)

Ordered, by The House of Commons, *to be Printed,*
7 *April* 1875.

132.

Under 2 *oz.*

MERCHANT SERVICE.

RETURN to an Order of the Honourable The House of Commons, dated 5 July 1875;—*for*,

RETURN "showing the Number, Ages, Ratings, and Causes of Death of Seamen reported to the Board of Trade as having Died in the British Merchant Service during the Year 1874 (in continuation of Parliamentary Paper, No. 142, of Session 1874)."

Board of Trade, 5 July 1875.

T. H. FARRER.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed*, 5 *July* 1875.

RETURN showing the Number, Ages, Ratings, and Causes of Death of SEAMEN reported to the Board of Trade, during the Year 1874, as having DIED in the BRITISH MERCHANT SERVICE.

(A.)—NUMBER AND CAUSES OF DEATHS.

Note.—The classification in Table (A.) is prepared from the various reports of the causes of death made principally by the masters of vessels to which the men belonged. The return contains some of the cases of deaths in British colonial ships; it contains also many, if not most, of the cases of men who die abroad after their discharge sick from British ships, but not the cases of men who die under similar circumstances in the United Kingdom.

Class.	CAUSES OF DEATH.	1874.		1873.	1872.
1	Fevers:				
	Yellow fever	193			
	Intermittent fever or ague	6			
	Continued fever (under various names)	180			
			379	676	468
2	Eruptive Fevers or Rashes:				
	Small-pox	20			
	Measles	—			
			20	40	75
3	Diseases of the Brain and Nervous System:				
	Apoplexy, paralysis, epilepsy, delirium tremens, lock-jaw, fits, brain disease, &c.		114	145	122
4	Diseases of the Heart and great Blood Vessels:				
	Heart disease, aneurism, hypertrophy, &c.		128	138	110
5	Diseases of the Lungs and Air-passages:				
	Quinsy, bronchitis, pneumonia, pleurisy, asthma, catarrh, laryngitis, &c.	60			
	Consumption	124			
			184	225	179
6	Diseases of the Stomach, Bowels, Liver, and Digestive Organs:				
	Cholera	93			
	Dysentery	92			
	Inflammation, diarrhœa, &c.	90			
			275	295	220
7	Diseases of the Urinary and Genital Organs:				
	Diseases of kidney, bladder, stricture, venereal, &c.		24	30	33
8	Diseases of the Skin and Cellular Tissue:				
	Abscess, ulcer, gangrene, tumour, erysipelas, &c.		19	12	16
9	Rheumatism and Gout:				
	Rheumatic fever, &c.		7	7	9
	Carried forward		1,150	1,568	1,232

Class.	Causes of Death.	1874.		1873.	1872.
	Brought forward - - -	- -	1,150	1,568	1,232
10	Scurvy - - - - - - - - - - -	- -	3	2	3
11	Other diseases - - - - - - - - - -	- -	42	52	26
12	Natural causes - - - - - - - - - -	- -	60	31	79
13	Accidental Deaths:				
	Drowned by wreck - - - - - - - -	1,819	- -	- -	*1,324*
	„ accident other than wreck - - - -	1,040	- -	- -	*973*
	Other accidental deaths - - - - - -	282	- -	- -	*327*
			3,141	3,554	2,624
14	Murder and homicide - - - - - - - -	- -	23	5	17
15	Suicide - - - - - - - - - - -	- -	22	41	26
16	Unknown causes - - - - - - - - -	- -	161	140	116
	Total - - -		4,602	5,393	4,123

(B.)—Ages.	1874.	1873.	1872.
Under 21 - - - - -	901	1,014	814
From 21 to 30 - - -	1,818	2,191	1,753
„ 31 „ 40 - - -	815	917	683
„ 41 „ 50 - - -	329	366	319
„ 51 „ 60 - - -	95	125	77
Over 60 - - - - -	13	20	15
Unknown - - - - -	631	760	462
Total - - -	4,602	5,393	4,123

(C.)—Ratings.	1874.	1873.	1872.
Mates - - - -	366	466	288
Midshipmen - - -	1	4	9
Quartermasters - - -	18	21	36
Boatswains - - -	127	131	94
Able Seamen - - -	1,642	1,872	1,604
Ordinary Seamen - -	425	513	459
Apprentices and Boys -	303	349	237
Surgeons - - - -	13	18	10
Cooks and Stewards - -	353	445	323
Carpenters - - -	128	163	123
Sailmakers - - -	41	40	28
Minor capacities - -	64	46	29
Engineers - - - -	91	133	80
Firemen - - - -	225	288	145
Stowaways - - -	25	5	10
Unknown - - - -	780	899	648
Total - - -	4,602	5,393	4,123

July 1875.

Allen Stoneham,
Registrar General of Shipping and Seamen.

MERCHANT SERVICE.

RETURN showing the Number, Ages, Ratings, and Causes of Death of SEAMEN reported to the Board of Trade, during the Year 1874, as having DIED in the BRITISH MERCHANT SERVICE (in continuation of Parliamentary Paper, No. 142, of Session 1874).

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed,*
5 *July* 1875.

Under 1 *oz.*

MERCHANT SEAMEN'S FUND.

ACCOUNT of the RECEIPT and EXPENDITURE under the SEAMEN'S FUND WINDING-UP ACT, from 1st January to 31st December 1873; with an ACCOUNT of the Sums Received and Paid for the Wages and Effects of Deceased Seamen in the Year 1873.

(*Pursuant to Acts* 14 *&* 15 *Vict. c.* 102, *s.* 59, *and* 17 *&* 18 *Vict. c.* 104, *s.* 202.)

Ordered, by The House of Commons, *to be Printed,*
12 *April* 1875.

AN ACCOUNT of the RECEIPT and EXPENDITURE under the SEAMEN'S FUND WINDING-UP ACT, from 1st January to 31st December 1873.

RECEIPTS.	£.	s.	d.	PAYMENTS.	£.	s.	d.	£.	s.	d.
To Balance in hand on 1st January 1873, as shown in the preceding Account, to 31st December 1872	13,032	6	4	By Amount paid for Pensions, including the sum of 29 *l.* 2 *s.* 7 *d.* granted by way of Annuity to the late Officers of the Trustees whose offices were abolished, and for Legal Expenses under Merchant Shipping Act, 1871	40,058	4	6			
To Amount of the Vote of Parliament for the year ending 31st March 1874	40,288	–	–	By Amount paid for Commutation of Pensions	73	16	–			
								40,132	–	6
				By Saving on the Parliamentary Vote 1871–72, surrendered	–	–	–	2,024	10	1
								42,156	10	7
				By Balance in hand on 31st December 1871, as under, viz.:—						
				Amount in the Exchequer	10,000	–	–			
				Cash in the hands of Her Majesty's Paymaster General	1,027	9	6			
				Amount advanced to the War Department for payment of Pensions in 1873	136	6	3			
								11,163	15	9
£.	53,320	6	4				£.	53,320	6	4

Amount received for Voluntary Contributions from Masters and Seamen during the Year 1873, and paid into Her Majesty's Exchequer, 692 *l.* 11 *s.* 1 *d.*

Board of Trade, March 1875.

R. G. C. Hamilton, Assistant Secretary.

COMPARATIVE STATEMENT of the NUMBER and AMOUNT of the whole of the PENSIONS, and of each CLASS of PENSIONS, Granted in the Years 1872 and 1873.

Rate of Pension.	CLASS OF PENSIONERS.	1872.		1873.	
		Number.	Amount.	Number.	Amount.
£. s. d.			£. s. d.		£. s. d.
6 16 –	Masters	91	618 16 –	68	462 8 –
3 8 –	Seamen	22	74 16 –	32	108 16 –
4 8 –	Widows of Masters	91	400 8 –	87	382 16 –
2 4 –	Widows of Seamen	70	154 – –	75	165 – –
2 4 –	Children of Masters	36	79 4 –	29	63 16 –
1 2 –	Children of Seamen	4	4 8 –	12	13 4 –
		314	1,331 12 –	303	1,196 – –

COMPARATIVE STATEMENT of the NUMBER and AMOUNT of the whole of the PENSIONS, and of each CLASS of PENSIONS, Expired in the Years 1872 and 1873.

CLASS OF PENSIONERS.	1872.		1873.	
	Number.	Amount.	Number.	Amount.
		£. s. d.		£. s. d.
Masters	138	893 14 –	135	856 12 –
Seamen	201	668 18 –	180	587 5 6
Widows of Masters	150	619 13 –	162	597 11 1
Widows of Seamen	314	658 10 10	309	636 12 2
Children of Masters	60	131 14 –	49	101 12 –
Children of Seamen	47	57 4 –	33	36 6 –
	910	3,029 13 10	868	2,815 18 9

COMPARATIVE STATEMENT of the NUMBER of PENSIONERS upon the FUND on the 31st December 1872 and 31st December 1873; distinguishing between Men, Women, and Children, and between different Scales of Pensions, and the Total Amount of Pensions of each Class.

CLASS OF PENSIONERS.	1872.		1873.	
	Number.	Amount.	Number.	Amount.
		£. s. d.		£. s. d.
Masters	1,811	12,025 10 –	1,744	11,631 6 –
Seamen	1,891	6,468 13 –	1,743	5,990 3 6
Widows of Masters	3,054	11,890 8 6	2,979	11,675 13 5
Widows of Seamen	4,665	9,982 17 11	4,431	9,511 5 9
Children of Masters	408	747 10 8	388	709 14 8
Children of Seamen	420	414 5 –	399	391 3 –
	12,249	41,529 5 1	11,684	39,909 6 4

AN ACCOUNT of the PROPERTY and MONEYS held by the TRUSTEES of the MERCHANT SEAMEN'S FUND, at the undermentioned PORTS, for Special Purposes distinct from the General Purposes of the FUND, and the Receipt and Expenditure for the same, for the Year 1873.

Sunderland	Freehold Ground in Assembly Garth, whereon are built several Houses and a Seamen's Hall; also 13 Houses in Trafalgar-square, Sunderland, subject to a Ground-rent of 5 *l.* per annum.
	£. 650. Bond of Commissioners of the River Wear.
	Cash received for Rents of 12 *s.* and 10 *s.* per annum from the Inmates, Interest on Bond, Bequest, and Subscriptions, and sundry other Receipts (including last year's Balance of 120 *l.* 1 *s.* 3 *d.*), 169 *l.* 16 *s.* 11 *d.*
	Cash paid for Salaries, Ground-rent, Insurance, Repairs, Water-rate, and Sundries, 134 *l.* 8 *s.* 2 *d.*
	Leaving a Balance of 35 *l.* 8 *s.* 9 *d.* in the hands of the Trustees and at Bankers'.
Rye	Three Leasehold Cottages, subject to a Ground-rent of 13 *s.* 4 *d.* per annum, and 500 *l.* Three per Cent. Consols.
	Cash received for Rent of 40 *s.* per annum from the Inmates, and dividends on Consols (including last year's Balance of 43 *l.* 2 *s.*), 63 *l.* 4 *s.* 4 *d.*
	Cash paid for Ground-rent, Gratuities, and Repairs, 4 *l.* 5 *s.* 6 *d.*
	Balance in the hands of the Trustees, 58 *l.* 18 *s.* 10 *d.*
Boston	Twelve Almshouses.
	Cash received for Rent from Inmates (including last year's Balance of 2 *l.* 11 *s.* 6 *d.*), 10 *l.* 11 *s.* 6 *d.*
	Cash paid for Insurance, Water-rate, and Repairs, 6 *l.* 14 *s.* 8 *d.*
	Balance in the hands of the Trustees, 3 *l.* 16 *s.* 10 *d.*
*Scarborough	Sixty-seven Dwellings or Buildings, called the Seamen's Hospital and Trinity House.
	Bequest of 837 *l.*, Three per Cent. Annuities.
	Cash received for Dividends, 25 *l.* 2 *s.* 2 *d.*; Rent, 20 *l.* 18 *s.*; Cash drawn from Savings Bank, Savings' Bank Interest, and Sale of Old Materials, 27 *l.* 13 *s.* 2 *d.*; Total Receipts (including last year's balance of 21 *l.* 3 *s.* 10 *d.*), 94 *l.* 17 *s.* 2 *d.*
	Cash paid to Inmates of the Houses, 16 *l.* 16 *s.*; Alterations and Repairs, 41 *l.* 12 *s.* 6 *d.*; Insurance, Gas and Water Rates, and Sundries, 15 *l.* 1 *s.* 10 *d.*; Total Payments, 73 *l.* 10 *s.* 4 *d.*
	Balance in the hands of the Trustees, 21 *l.* 6 *s.* 10 *d.*
Whitby	Fifty Tenements, called Seamen's Hospital Houses.
	Bequest of 300 *l.*, Three per Cent. Consols, and 130 *l.* 1 *s.* 2 *d.*, Three per Cent. Annuities.
	Cash received for Rent and Dividends (including last year's balance of 9 *l.* 8 *s.* 8 *d.*), 27 *l.* 4 *s.* 1 *d.*
	Cash paid for Repairs, Insurance, Coals distributed to Inmates, and Sundries, 19 *l.* 16 *s.*
	Balance in the hands of the Trustees, 7 *l.* 8 *s.* 1 *d.*
Liverpool	£. 1,600 Bonds of the Dock Company of the Town of Liverpool, received from the Committee of the Nelson Fund.
	Cash received for Interest on Bonds (including last year's balance of 16 *l.* 10 *s.* 11 *d.*), 87 *l.* 9 *s.* 11 *d.*
	Cash paid to 16 Masters and 7 Widows, 70 *l.*
	Balance in the hands of the Trustees, 17 *l.* 9 *s.* 11 *d.*

*In this year's returns the Accounts of the Merchant Seamen's Fund and of the Trinity House at Scarborough are amalgamated.

ACCOUNT of the SUMS Received, from the 1st January to the 31st December 1873, for the WAGES and EFFECTS of DECEASED SEAMEN, and of the PAYMENTS made for the same Period.

	£. s. d.	Cash. £. s. d.	Exchequer Bills. £. s. d.
Balance in hand on 31st December 1872, as shown in the preceding Account -		6,802 15 4	61,000 – –
Amount received in 1873 from the Masters of Vessels, and from the Collectors of Customs in the Colonies, and from Her Majesty's Consuls abroad, for Wages and Effects of 5,297 Deceased Seamen - - - - - - -		30,943 11 5	
Interest received on Exchequer Bills - - - - - - - - -		1,648 15 10	
		39,395 2 7	
Amount paid in 1873 to the Relatives and Representatives of 2,767 Deceased Seamen - - - - - - -	21,726 8 10		
Amount unclaimed, received prior to 1st January 1867, paid into Her Majesty's Exchequer - - - - - - -	10,599 1 4		
Amount of Interest on unclaimed Wages and Effects paid into the Exchequer - - - - - - - -	1,589 18 2		
		33,915 8 4	
BALANCE unclaimed on 31st December 1873 - - £.		5,479 14 3	61,000 – –
Particulars of Balance, viz.:			
For Cash in the hands of Her Majesty's Paymaster General - - - -		3,548 5 7	
Less outstanding Payable Orders - - - - - - - -		18 11 10	
		3,529 13 9	
For Exchequer Bills - - - - - - - - - - - -		- - -	61,000 – –
For Advances, viz.:	£. s. d.		
Due by Vote for Relief of Distressed Seamen - - -	2,730 12 –		
Less due to the Mercantile Marine Fund - -	780 11 6		
		1,950 – 6	
	£.	5,479 14 3	61,000 – –

Board of Trade,
March 1875.

R. G. C. Hamilton,
Assistant Secretary.

MERCHANT SEAMEN'S FUND.

ACCOUNT of the Receipt and Expenditure under the Seamen's Fund Winding-up Act, from 1 January to 31 December 1873; with an Account of the Sums Received and Paid for the Wages and Effects of Deceased Seamen in the Year 1873.

(*Pursuant to Acts* 14 *&* 15 *Vict. c.* 102, *s.* 59, *and* 17 *&* 18 *Vict. c.* 104, *s.* 202.)

Ordered, by The House of Commons, *to be Printed*, 12 *April* 1875.

143.

Under 1 *oz.*

RETURN

OF ALL

VESSELS ORDERED TO BE SURVEYED BY THE BOARD OF TRADE

UNDER THE

12th Section of the 36th and 37th Victoria, Chapter 85., from 1st August to 31st December 1874;

TOGETHER WITH A

SUMMARY

Showing the Number of Ships ordered to be surveyed, under the same Section, from 5th August 1873 to 31st December 1874.

(*In continuation of Parliamentary Paper* [C.—1105.] *of Session* 1874.)

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

1875.

[C. 1152.] *Price 2d.*

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TABLE I.

SHIPS REPORTED FOR SURVEY (1st to 31st August 1874).

Cases in which the Act has been put in force.

VESSELS REPORTED AS DEFECTIVE IN HULL, EQUIPMENTS, OR MACHINERY.

A List of Vessels ordered to be surveyed by the Board of Trade in pursuance of the 12th Section of the Merchant Shipping Act, 1873, in consequence of alleged Defects in Hull, Equipments, or Machinery, from 1st to 31st August 1874.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Whether Laden or Unladen. Laden.	Unladen.	Unknown.	Total.	Result of Survey. Found Seaworthy.	Found Unseaworthy and ordered to be repaired or repaired after Survey.	Dismantled or broken up after Survey.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under	Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 16 to 20	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 21 to 30	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 31 to 40	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 41 to 50	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	1	..	..	..	..
to 51 to 60	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 61 to 70	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
to 71 to 80	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 81 to 90	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 91 to 100	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	1	..	..	..
to 101 to 150	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	2	1	3	..	..	..	..	..	..	..	..	1	2	..	3	..	2	..	1	..	..	..	..	..	..
to 151 to 200	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	1	2	..	..	..	..	..	..	..	..	2	..	..	2	..	1	..	1	..	..	..	..	..	..
to 201 to 250	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
to 251 to 500	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	2	1	3	..	..	..	..	..	..	..	..	3	..	..	3	..	2	..	1	..	..	..	..	..	..
to 501 to 750	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	1	..	..	..	1	..	..	..	..	..	..
to 751 to 1,000	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,001 to 1,500	Steam „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,501 to 2,000	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2,001 & upwards	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steam Vessels - -		..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
Sailing Vessels - -		..	7	6	13	..	..	..	..	..	..	1	1	9	5	..	14	..	7	..	7	..	1	1	..	..	..
Total - -		..	7	7	14	..	..	..	..	..	..	1	1	10	5	..	15	..	7	..	8	..	1*	1*	..	..	..

* In the remaining instances either there was no crew on board or the crew expressed no opinion.

TABLE II.

SHIPS REPORTED FOR SURVEY (1st to 31st August 1874).

Cases in which the Act has been put in force.

VESSELS REPORTED AS OVERLADEN OR IMPROPERLY LADEN.

A List of Vessels surveyed by the Board of Trade in pursuance of the 12th Section of the Merchant Shipping Act, 1873, in consequence of Allegations of Overloading or Improper Loading, from 1st to 31st August 1874.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Gross Total.	Result of Survey. Found Seaworthy.	Lightened or Re-loaded.	Of the cases in which the Crews expressed willingness to proceed in the Vessel.* Found Seaworthy.	Found Unseaworthy.	Of the cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Seaworthy.	Found Unseaworthy.
Tons. 15 and under	Steam Vessels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 20	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 30	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 40	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 50	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 60	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 70	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 80	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 90	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 100	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 150	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 151	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 200	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 250	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 500	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 501	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
to 750	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 751	Steam „	...	2†	...	2	...	...	...	...	...	...	...	...	2†	...	2†	...	...	...	...
to 1,000	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,001	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,500	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,501	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 2,000	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Steam Vessels		...	3	...	3	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...
Sailing Vessels		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total		...	3	...	3	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...

* No opinion was expressed by the crew in the cases included in this Table.
† These Vessels were detained in consequence of "Improper loading."

TABLE III.

SHIPS REPORTED FOR SURVEY (1st to 30th September 1874).

Cases in which the Act has been put in force.

VESSELS REPORTED AS DEFECTIVE IN HULL, EQUIPMENTS, OR MACHINERY.

A List of Vessels ordered to be surveyed by the Board of Trade in pursuance of the provisions of the 12th Section of the Merchant Shipping Act, 1873, in consequence of alleged Defects in Hull, Equipments, or Machinery, from 1st to 30th September 1874.

Tonnage.	Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Whether Laden or Unladen. Laden.	Unladen.	Unknown.	Total.	Result of Survey. Found Seaworthy.	Found Unseaworthy and ordered to be repaired, or repaired after Survey.	Dismantled or broken up after Survey.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under — Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tons. 15 and under — Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 16 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 20 — Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 21 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 30 — Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 31 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 40 — Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 41 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 50 — Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	1	..	..	..	..
to 51 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 60 — Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	1	..
to 61 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 70 — Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 71 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 80 — Sailing „	..	2	..	2	..	..	..	..	..	..	..	..	1	1	..	2	..	2	..	..	..	..	..	..	1	..
to 81 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 90 — Sailing „	..	1	1	2	..	..	..	..	..	..	..	..	2	..	..	2	..	1	..	1	..	..	..	..	..	..
to 91 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 100 — Sailing „	..	3	..	3	..	..	..	..	..	..	..	..	1	2	..	3	..	3	..	..	..	..	..	..	..	..
to 101 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 150 — Sailing „	..	2	..	2	..	..	..	..	..	..	..	..	1	1	..	2	..	2	..	..	..	..	..	..	1	..
to 151 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 200 — Sailing „	..	2	2	4	..	..	..	..	..	..	..	..	3	1	..	4	..	2	..	2	..	..	..	..	1	..
to 201 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 250 — Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	1	..	..	..
to 251 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 500 — Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	1
to 501 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 750 — Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 751 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,000 — Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 1,001 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,500 — Sailing „	..	1	1	2	..	..	..	..	..	..	..	..	1	1	..	2	..	1	..	1	..	..	..	..	..	..
to 1,501 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 2,000 — Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2,001 & upwards — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2,001 & upwards — Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing Vessels	..	16	6	22	..	..	..	..	..	..	..	..	14	8	..	22	..	16	..	6	..	1		..	4	1
Total	..	16	6	22	..	..	..	..	..	..	..	..	14	8	..	22	..	16	..	6	..	1*	1*	..	4*	1*

* In the remaining instances no opinion was expressed by the crew, or there was no crew on board.

TABLE IV.

SHIPS REPORTED FOR SURVEY (1st to 30th September 1874).

Cases in which the Act has been put in force.

VESSELS REPORTED AS OVERLADEN.

A List of Vessels ordered to be surveyed by the Board of Trade, in pursuance of the provisions of the 12th Section of the Merchant Shipping Act, 1873, in consequence of Allegations of Overloading, from 1st to 30th September 1874.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Gross Total.	Result of Survey. Found Seaworthy.	Result of Survey. Lightened.	Result of Survey. Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Unseaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Unseaworthy.
Tons. 15 and under	Steam Vessels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16 to 20	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21 to 30	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31 to 40	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41 to 50	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51 to 60	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61 to 70	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71 to 80	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81 to 90	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91 to 100	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101 to 150	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 151 to 200	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201 to 250	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251 to 500	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 501 to 750	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 751 to 1,000	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,001 to 1,500	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,501 to 2,000	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Steam Vessels		...	2	...	2	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...
Sailing Vessels		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total		...	2	...	2	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...

* The crew expressed no opinion in either of the cases included in this Table.

TABLE V.

SHIPS REPORTED FOR SURVEY (1st to 31st October 1874).

Cases in which the Act has been put in force.

VESSELS REPORTED AS DEFECTIVE IN HULL, EQUIPMENTS, OR MACHINERY.

A List of Vessels ordered to be surveyed by the Board of Trade in pursuance of the provisions of the 12th Section of the Merchant Shipping Act, 1873, in consequence of alleged Defects in Hull, Equipments, or Machinery, from 1st to 31st October 1874.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Whether Laden or Unladen. Laden.	Unladen.	Unknown.	Total.	Result of Survey. Found Seaworthy.	Found Unseaworthy and ordered to be repaired, or repaired after Survey.	Dismantled or broken up after Survey.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under	Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 16	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 20	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 21	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 30	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 31	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 40	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 41	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 50	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
to 51	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 60	Sailing „	..	1	1	2	..	..	..	..	..	..	..	..	2	..	..	2	..	1	..	1	..	..	..	..	..	..
to 61	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 70	Sailing „	..	6	..	6	..	..	1	1	..	..	..	..	3	4	..	7	..	6	..	1	..	..	..	..	1	1
to 71	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 80	Sailing „	..	3	..	3	..	..	..	..	..	..	..	..	2	1	..	3	..	3	..	..	..	..	..	..	..	..
to 81	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 90	Sailing „	..	3	..	3	..	1	..	1	..	..	..	..	2	2	..	4	..	4	..	..	..	..	..	..	1	..
to 91	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 100	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 101	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 150	Sailing „	..	4	3	7	..	..	..	..	..	..	..	..	4	3	..	7	..	4	..	3	..	..	..	..	..	1
to 151	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 200	Sailing „	..	..	1	1	..	..	1	1	..	..	..	..	2	..	..	2	..	..	..	2	..	..	..	..	..	1
to 201	Steam „	..	..	..	..	..	..	..	..	..	1	..	1	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 250	Sailing „	..	2	..	2	..	..	..	..	..	..	..	..	2	..	..	2	..	2	..	..	..	1	..	..	..	..
to 251	Steam „	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 500	Sailing „	..	3	1	4	..	..	..	..	..	..	..	..	3	1	..	4	..	3	..	1	..	..	..	..	..	..
to 501	Steam „	..	..	..	..	..	..	..	..	..	1	..	1	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 750	Sailing „	..	1	1	2	..	..	..	..	..	..	..	..	..	2	..	2	..	1	..	1	..	..	..	..	1	..
to 751	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,000	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..
to 1,001	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,500	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,501	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 2,000	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2,001 & upwards	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steam Vessels		..	..	..	..	..	..	..	..	..	3	..	3	2	1	..	3	..	3	..	..	..	..	..	..	..	..
Sailing Vessels		..	24	9	33	..	1	2	3	..	..	..	..	21	15	..	36	..	25	..	11	..	1	..	..	3	4
Total		..	24	9	33	..	1	2	3	..	3	..	3	23	16	..	39	..	28	..	11	..	1*	..	..	3*	4*

* In the remaining instances no opinion was expressed by the crew, or there was no crew on board.

TABLE VI.

SHIPS REPORTED FOR SURVEY (1st to 31st October 1874).

Cases in which the Act has been put in force.

VESSELS REPORTED AS OVERLADEN OR IMPROPERLY LADEN.

A List of Vessels ordered to be surveyed by the Board of Trade, in pursuance of the provisions of the 12th Section of the Merchant Shipping Act, 1873, in consequence of Allegations of Overloading or Improper Loading, from 1st to 31st October 1874.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Gross Total.	Result of Survey. Found Seaworthy.	Result of Survey. Lightened or Re-loaded.	Result of Survey. Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Unseaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Unseaworthy.
Tons. 15 and under	Steam Vessels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
50	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
60	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
70	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
80	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
90	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
100	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
150	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 151	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
200	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
250	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
500	Sailing „	...	1	...	1	...	...	...	...	...	...	...	...	1†	...	1	...	...	...	...	...	...
to 501	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
750	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 751	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1,000	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,001	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1,500	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,501	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,000	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Steam Vessels -		...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
Sailing Vessels -		...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...
Total - -		...	2	...	2	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...	...

* In the cases included in this Table no opinion was expressed by the crews.
† This vessel was detained as improperly laden.

TABLE VII.

SHIPS REPORTED FOR SURVEY (1st to 30th November 1874).

Cases in which the Act has been put in force.

VESSELS REPORTED AS DEFECTIVE IN HULL, EQUIPMENTS, OR MACHINERY.

A List of Vessels ordered to be surveyed by the Board of Trade, in pursuance of the provisions of the 12th Section of the Merchant Shipping Act, 1873, in consequence of alleged Defects in Hull, Equipments, or Machinery, from 1st to 30th November 1874.

Tonnage.	Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Whether Laden or Unladen. Laden.	Unladen.	Unknown.	Total.	Result of Survey. Found Seaworthy.	Found Unseaworthy and ordered to be repaired, or repaired after Survey.	Dismantled or broken up after Survey.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under — Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 16 to 20 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 21 to 30 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 31 to 40 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
to 41 to 50 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	3	..	3	..	..	..	..	..	..	..	..	..	3	..	3	..	3	..	..	..	1	..	..	1	..
to 51 to 60 — Steam „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
to 61 to 70 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 71 to 80 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 81 to 90 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	1	1	2	..	..	..	..	..	..	..	..	..	2	..	2	..	1	..	1	..	..	..	..	..	..
to 91 to 100 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	2	2	4	..	..	..	..	..	..	..	..	3	1	..	4	..	2	..	2	..	..	..	..	..	1
to 101 to 150 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	7	..	7	..	..	1	1	..	..	..	..	4	4	..	8	..	7	..	1	..	..	..	..	..	..
to 151 to 200 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 201 to 250 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	1	1	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	1
to 251 to 500 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	3	1	4	..	..	..	..	..	..	..	..	3	1	..	4	..	3	..	1	..	..	..	..	..	..
to 501 to 750 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 751 to 1,000 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 1,001 to 1,500 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 1,501 to 2,000 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2,001 & upwards — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steam Vessels -	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
Sailing Vessels -	..	21	6	27	..	..	2	2	..	..	..	..	17	12	..	29	..	21	..	8	..	1	..	..	1	2
Total -	..	22	6	28	..	..	2	2	..	..	..	..	17	13	..	30	..	22	..	8	..	1*	..	..	1*	2*

* In the remaining instances either there was no crew on board, or the crew expressed no opinion.

TABLE VIII.

SHIPS REPORTED FOR SURVEY (1st to 30th November 1874).

Cases in which the Act has been put in force.

VESSELS REPORTED AS OVERLADEN OR IMPROPERLY LADEN.

A LIST of VESSELS ordered to be surveyed by the BOARD OF TRADE, in pursuance of the provisions of the 12th Section of the MERCHANT SHIPPING ACT, 1873, in consequence of ALLEGATIONS of OVERLOADING or IMPROPER LOADING, from 1st to 30th NOVEMBER 1874.

TONNAGE.		Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Gross Total.	Result of Survey. Found Seaworthy.	Result of Survey. Lightened or Re-loaded.	Result of Survey. Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Unseaworthy.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Unseaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Survey pending.
Tons. 15 and under	Steam Vessels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
50	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
60	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
70	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
80	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
90	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
100	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
150	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 151	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
200	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
250	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
500	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 501	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
750	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 751	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1,000	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,001	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1,500	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,501	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,000	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Steam Vessels		...	2	...	2	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...	...	...
Sailing Vessels		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL		...	2	...	2	...	...	...	...	...	...	...	...	2†	...	2	...	...	...	...	...	...	...

* In the cases included in this Table, no opinion was expressed by the crews.
† Both these vessels were detained in consequence of overloading.

TABLE IX.

SHIPS REPORTED FOR SURVEY (1st to 31st December 1874).

Cases in which the Act has been put in force.

VESSELS REPORTED AS DEFECTIVE IN HULL, EQUIPMENTS, OR MACHINERY.*

A List of Vessels ordered to be surveyed by the Board of Trade, in pursuance of the provisions of the 12th Section of the Merchant Shipping Act, 1873, in consequence of alleged Defects in Hull, Equipments, or Machinery, from 1st to 31st December 1874.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Whether Laden or Unladen. Laden.	Unladen.	Unknown.	Total.	Result of Survey. Found Seaworthy.	Found Unseaworthy and ordered to be repaired, or repaired after Survey.	Dismantled or broken up after Survey.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.† Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.† Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under	Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 16 to 20	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 21 to 30	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 31 to 40	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 41 to 50	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 51 to 60	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 61 to 70	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 71 to 80	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 81 to 90	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
to 91 to 100	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 101 to 150	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	2	..	2	..	..	..	..	..	..	..	..	..	2	..	2	..	2	..	..	..	..	..	..	1	..
to 151 to 200	Steam „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	1	..	..	..
	Sailing „	..	3	1	4	..	..	..	..	..	..	..	..	1	3	..	4	..	3	..	1	..	..	..	..	1	..
to 201 to 250	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 251 to 500	Steam „	..	..	..	..	..	..	..	..	..	1	..	1	1	..	..	1	..	1	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
to 501 to 750	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 751 to 1,000	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,001 to 1,500	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 1,501 to 2,000	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2,001 & upwards	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steam Vessels -	-	..	..	1	1	..	..	..	..	..	1	..	1	2	..	..	2	..	1	..	1	..	..	1	..	..	..
Sailing Vessels -	-	..	7	3	10	..	..	..	..	..	..	..	..	3	7	..	10	..	7	..	3	..	..	..	..	2	..
Total -	-	..	7	4	11	..	..	..	..	..	1	..	1	5	7	..	12	..	8	..	4	..	..	1	..	2	..

* No vessels were detained in consequence of overloading during the month of December 1874.
† In the remaining instances either the crew expressed no opinion, or there was no crew on board.

TABLE X.

SHIPS REPORTED FOR SURVEY (1st to 31st December 1874).

Cases in which the Act has been put in force.

VESSELS REPORTED AS OVERLADEN.

A List of Vessels ordered to be surveyed by the Board of Trade, in pursuance of the provisions of the 12th Section of the Merchant Shipping Act, 1873, in consequence of Allegations of Overloading, from 1st to 31st December 1874.

Tonnage.	Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Gross Total.	Result of Survey. Found Seaworthy.	Result of Survey. Lightened or Reloaded.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Unseaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Unseaworthy.
Tons. 15 and under — Steam Vessels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
15 and under — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16 to 20 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16 to 20 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21 to 30 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21 to 30 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31 to 40 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31 to 40 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41 to 50 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41 to 50 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51 to 60 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51 to 60 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61 to 70 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61 to 70 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71 to 80 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71 to 80 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81 to 90 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81 to 90 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91 to 100 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91 to 100 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101 to 150 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101 to 150 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 151 to 200 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 151 to 200 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201 to 250 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201 to 250 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251 to 500 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251 to 500 — Sailing „	...	...	...	...	...	...	...	...	...	1	...	1	1	...	1	...	...	...	...
to 501 to 750 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 501 to 750 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 751 to 1,000 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 751 to 1,000 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,001 to 1,500 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,001 to 1,500 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,501 to 2,000 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,501 to 2,000 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Steam Vessels -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sailing Vessels -	...	...	...	...	...	...	...	...	...	1	...	1	1	...	1	...	...	...	..
Total - -	...	...	...	...	...	...	...	...	...	1	...	1	1	...	1	...	...	...	...

* In the case included in this Table, no opinion was expressed by the crew.

TABLE XI.

SHIPS REPORTED FOR SURVEY.

SUMMARY FROM 1st AUGUST TO 31st DECEMBER 1874.

I.—Alleged Defects in Hull, Equipments, or Machinery.

Description of Vessel.	Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Total Number of Vessels reported as defective. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.
Steam Vessels (iron) -	...	2	1	3	...	...	...	...	...	4	...	4	...	6	1	7
Sailing „ (wood)	...	91	14	105	...	3	2	5	...	1	...	1	...	95	16	111
Total -	...	93	15	108	...	3	2	5	...	5	...	5	...	101	17	118*

* Of these 118 Vessels 11 were dismantled or broken up after survey.

II.—Alleged Cases of Overloading or Improper Loading.

Description of Vessel.	Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Total Number of Vessels reported as overladen or improperly laden. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.
Steam Vessels (iron) -	...	8	...	8	...	...	...	...	...	...	...	...	...	8	...	8
Sailing „ (wood)	...	1	...	1	...	...	...	...	...	1	...	1	...	2	...	2
Total -	...	9	...	9	...	...	...	...	...	1	...	1	...	10	...	10†

† These 10 Vessels were lightened or reloaded to the satisfaction of the Board of Trade Surveyors, and in no instance in which the Act has been put in force has the allegation of overloading or improper loading been found grouudless.

TABLE XII.

SHIPS REPORTED FOR SURVEY.

SUMMARY FROM 5TH AUGUST 1873 TO 31ST DECEMBER 1874.

I.—Alleged Defects in Hull, Equipments, or Machinery.

Description of Vessel.	Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Total Number of Vessels reported as defective. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.
Steam Vessels (iron) -	1	7	3	**11**	1	...	...	**1**	...	5	...	**5**	2	12	3	**17**
Sailing „ (wood)	11	367	14	**392**	...	7	5	**12**	1	18	...	**19**	12	392	19	**423**
TOTAL -	**12**	**374**	**17**	**403**	**1**	**7**	**5**	**13**	**1**	**23**	...	**24**	**14**	**404**	**22**	**440***

* Of these 440 Vessels 25 were dismantled or broken up after survey.

II.—Alleged Cases of Overloading or Improper Loading.

Description of Vessel.	Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Total Number of Vessels reported as overladen or improperly laden. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.
Steam Vessels (iron) -	...	26	...	**26**	...	...	...	...	...	1	...	**1**	...	27	...	**27**
Sailing „ (wood)	...	6	...	**6**	...	...	...	...	...	1	...	**1**	...	7	...	**7**
TOTAL -	...	**32**	...	**32**	...	...	...	...	...	**2**	...	**2**	...	**34**	...	**34†**

† These 34 Vessels were lightened or reloaded to the satisfaction of the Board of Trade Surveyors, and in no instance in which the Act has been put in force has the allegation of overloading or improper loading been found groundless.

LONDON:
Printed by GEORGE E. EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty.
For Her Majesty's Stationery Office.

"MERCHANT SHIPPING ACT, 1873."

RETURN

OF ALL

VESSELS ORDERED TO BE SURVEYED BY THE BOARD OF TRADE

UNDER THE

12th Section of the 36th and 37th Victoria, Chapter 85., from 1st January to 31st March 1875;

TOGETHER WITH

SUMMARIES

Showing the Number and Tonnage of Ships ordered to be surveyed, under the same Section, from 5th August 1873 to 31st March 1875.

(*In continuation of Parliamentary Paper* [C.—1152].)

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

1875.

[C.—1233.] *Price* 1½*d.*

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TABLE I.

SHIPS REPORTED FOR SURVEY (1st to 31st January 1875).

Cases in which the Act has been put in force.

VESSELS REPORTED AS DEFECTIVE IN HULL, EQUIPMENTS, OR MACHINERY.

A List of Vessels ordered to be surveyed by the Board of Trade, in pursuance of the Provisions of the 12th Section of the "Merchant Shipping Act, 1873," in consequence of alleged Defects in Hull, Equipments, or Machinery, from 1st to 31st January 1875.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Whether Laden or Unladen. Laden.	Unladen.	Unknown.	Total.	Result of Survey. Found Seaworthy.	Found Unseaworthy and repaired, or ordered to be repaired.	Dismantled or broken up.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under	Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 16 to 20	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 21 to 30	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 31 to 40	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 41 to 50	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..
to 51 to 60	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	1	1	2	..	..	..	..	..	..	..	..	1	1	..	2	..	1	..	1	..	..	..	..	..	..
to 61 to 70	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 71 to 80	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	3	..	3	..	..	..	..	..	..	..	..	2	1	..	3	..	3	..	..	..	..	..	..	..	..
to 81 to 90	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
to 91 to 100	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 101 to 150	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	2	1	3	..	1	..	1	..	..	..	..	4	..	..	4	..	3	..	1	..	..	..	..	1	1
to 151 to 200	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	4	..	4	..	..	1	1	..	..	..	..	2	3	..	5	..	4	..	1	..	1	..	..	..	1
to 201 to 250	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	3	..	3	..	..	..	..	..	..	..	..	2	1	..	3	..	3	..	..	..	..	..	..	1	..
to 251 to 500	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	2	2	..	..	..	..	..	..	..	..	1	1	..	2	..	..	..	2	..	..	..	..	..	..
to 501 to 750	Steam "	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	1	..
	Sailing "	..	1	..	1	..	..	..	..	..	..	1	1	1	1	..	2	..	1	..	1	..	..	..	..	..	..
to 751 to 1,000	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,001 to 1,500	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,501 to 2,000	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2,001 & upwards	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steam Vessels		..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
Sailing Vessels		..	15	6	21	..	1	1	2	..	..	1	1	14	10	..	24	..	16	..	8	..	1	..	..	3	2
Total		..	16	6	22	..	1	1	2	..	..	1	1	15	10	..	25	..	17	..	8	..	1*	..	..	3*	2*

* In the remaining instances either there was no crew on board, or the crew expressed no opinion.

TABLE II.

SHIPS REPORTED FOR SURVEY (1st to 31st January 1875).

Cases in which the Act has been put in force.

VESSELS REPORTED AS OVERLADEN OR IMPROPERLY LADEN.

A List of Vessels ordered to be surveyed by the Board of Trade, in pursuance of the provisions of the 12th Section of the "Merchant Shipping Act, 1873," in consequence of Allegations of Overloading or Improper Loading, from 1st to 31st January 1875.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Gross Total.	Result of Survey. Found Seaworthy.	Lightened or Re-loaded.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under	Steam Vessels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
50	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
60	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
70	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
80	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
90	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
100	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
150	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 151	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
200	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
250	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...
500	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 501	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
750	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 751	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1,000	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,001	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1,500	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,501	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,000	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Steam Vessels		...	2	...	2	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...	...	...	...
Sailing Vessels		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total		...	2	...	2	...	...	...	...	...	...	...	...	2	...	2†	...	...	...	...	...	...	...

* In the cases included in this Table no opinion was expressed by the crews.
† These ships were detained as overloaded and improperly loaded.

TABLE III.

SHIPS REPORTED FOR SURVEY (1st to 28th February 1875).

Cases in which the Act has been put in force.

VESSELS REPORTED AS DEFECTIVE IN HULL, EQUIPMENTS, OR MACHINERY.

A List of Vessels ordered by the Board of Trade to be surveyed, in pursuance of the provisions of the 12th Section of the "Merchant Shipping Act, 1873," in consequence of alleged Defects in Hull, Equipments, or Machinery, from 1st to 28th February 1875.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Whether Laden or Unladen. Laden.	Unladen.	Unknown.	Total.	Result of Survey. Found Seaworthy.	Found Unseaworthy and ordered to be repaired, or repaired after Survey.	Dismantled or broken up after Survey.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under	Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 16 / 20	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 21 / 30	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 31 / 40	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 41 / 50	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 51 / 60	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 61 / 70	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	1	2	..	..	..	..	..	..	..	..	1	1	..	2	..	1	..	1	..	..	..	..	1	..
to 71 / 80	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 81 / 90	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 91 / 100	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..
to 101 / 150	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 151 / 200	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..
to 201 / 250	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	2	3	..	..	..	..	..	..	..	..	3	..	..	3	..	1	..	2	..	..	1	..	..	..
to 251 / 500	Steam „	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..
	Sailing „	..	1	1	2	..	..	..	..	..	..	..	..	2	..	..	2	..	1	..	1	..	..	..	..	..	..
to 501 / 750	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	2	1	3	..	..	..	..	..	..	..	..	1	2	..	3	..	2	..	1	..	..	..	..	..	..
to 751 / 1,000	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 1,001 / 1,500	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
to 1,501 / 2,000	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
2,001 & upwards	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steam Vessels		..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..
Sailing Vessels		..	7	9	16	..	..	..	..	..	..	..	..	10	6	..	16	..	7	..	9	..	..	1	..	1	..
Total		..	7	10	17	..	..	..	..	..	..	..	..	10	7	..	17	..	7	..	10	..	..	1	..	1	..

In the remaining instances either there was no crew on board, or the crew expressed no opinion.

TABLE IV.

SHIPS REPORTED FOR SURVEY (1st to 28th February 1875).

Cases in which the Act has been put in force.

VESSELS REPORTED AS OVERLADEN OR IMPROPERLY LADEN.

A List of Vessels ordered by the Board of Trade to be surveyed, in pursuance of the provisions of the 12th Section of the "Merchant Shipping Act, 1873," in consequence of Allegations of Overloading or Improper Loading, from 1st to 28th February 1875.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Gross Total.	Result of Survey. Found Seaworthy.	Result of Survey. Lightened or Re-loaded.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Unseaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Unseaworthy.
Tons. 15 and under	Steam Vessels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16 / 20	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21 / 30	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31 / 40	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41 / 50	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51 / 60	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61 / 70	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71 / 80	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81 / 90	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91 / 100	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101 / 150	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 151 / 200	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201 / 250	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251 / 500	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 501 / 750	Steam „	...	3	...	3	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 751 / 1,000	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,001 / 1,500	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,501 / 2,000	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Steam Vessels		...	5	...	5	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...
Sailing Vessels		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total		...	5	...	5	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...

* In the cases included in this Table either there were no crews on board, or the crews expressed no opinion.

TABLE V. .

SHIPS REPORTED FOR SURVEY (1st to 31st March 1875).

Cases in which the Act has been put in force.

VESSELS REPORTED AS DEFECTIVE IN HULL, EQUIPMENTS, OR MACHINERY.

A List of Vessels ordered by the Board of Trade to be surveyed, in pursuance of the provisions of the 12th Section of the "Merchant Shipping Act, 1873," in consequence of alleged Defects in Hull, Equipments, or Machinery, from 1st to 31st March 1875.

Tonnage.	Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Whether Laden or Unladen. Laden.	Unladen.	Unknown.	Total.	Result of Survey. Found Seaworthy.	Found Unseaworthy and ordered to be repaired, or repaired after Survey.	Dismantled or broken up after Survey.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under — Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 16 to 20 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 21 to 30 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 31 to 40 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 41 to 50 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 51 to 60 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 61 to 70 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 71 to 80 — Steam „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 81 to 90 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 91 to 100 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
to 101 to 150 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	2	..	2	..	..	..	..	..	..	..	..	..	2	..	2	..	2	..	..	..	..	..	..	..	..
to 151 to 200 — Steam „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
to 201 to 250 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 251 to 500 — Steam „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
Sailing „	..	2	..	2	..	..	..	..	..	..	..	..	2	..	..	2	..	2	..	..	..	..	..	..	..	..
to 501 to 750 — Steam „	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..	1	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 751 to 1,000 — Steam „	1	..	..	1	..	..	..	..	..	..	..	..	1	..	..	1	1	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,001 to 1,500 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,501 to 2,000 — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2,001 & upwards — Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steam Vessels	1	3	..	4	..	..	..	..	..	1	..	1	3	2	..	5	1	4	..	..	..	..	..	..	..	..
Sailing Vessels	..	9	1	10	..	..	..	..	..	..	..	..	6	4	..	10	..	9	..	1	..	..	..	..	..	..
Total	1	12	1	14	..	..	..	..	..	1	..	1	9	6	..	15	1	13	..	1	..	..	..	..	..	..

* In the cases included in this Table either there were no crews on board, or the crews expressed no opinion.

TABLE VI.

SHIPS REPORTED FOR SURVEY (1st to 31st March 1875).

Cases in which the Act has been put in force.

VESSELS REPORTED AS OVERLADEN OR IMPROPERLY LADEN.

A List of Vessels ordered by the Board of Trade to be surveyed, in pursuance of the provisions of the 12th Section of the "Merchant Shipping Act, 1873," in consequence of Allegations of Overloading or Improper Loading, from 1st to 31st March 1875.

Tonnage.	Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Gross Total.	Result of Survey. Found Seaworthy.	Result of Survey. Lightened or Re-loaded.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Unseaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Unseaworthy.
Tons. 15 and under — Steam Vessels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tons. 15 and under — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 20 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 20 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 30 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 30 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 40 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 40 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 50 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 50 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 60 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 60 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 70 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 70 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 80 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 80 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 90 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 90 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 100 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 100 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 150 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 150 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 151 — Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
to 151 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 200 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 200 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 250 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 250 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 500 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 500 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 501 — Steam „	...	4	...	4	...	...	...	...	...	...	...	...	4	...	4	...	...	...	...
to 501 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 750 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 750 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 751 — Steam „	...	1	...	1	...	...	...	...	...	1	...	1	2	...	2	...	...	...	...
to 1,000 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,000 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,001 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,500 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,501 — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 2,000 — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards — Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards — Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Steam Vessels -	...	6	...	6	...	...	...	...	...	1	...	1	7	...	7	...	...	...	...
Sailing Vessels -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total - -	...	6	...	6	...	...	...	...	...	1	...	1	7	...	7	...	...	...	...

* In the cases included in this Table no opinion was expressed by the crews.

TABLE VII.

TABLE showing the TOTAL REGISTER TONNAGE of all VESSELS ordered by the BOARD OF TRADE to be surveyed under the 12th Section of the "MERCHANT SHIPPING ACT, 1873," in consequence of—I. ALLEGED DEFECTS in HULL, EQUIPMENTS, or MACHINERY, and—II. In consequence of ALLEGATIONS of OVERLOADING or IMPROPER LOADING, from 5th August 1873 to 31st March 1875.

I.—Vessels ordered to be surveyed on account of alleged Defects in Hull, Equipments, or Machinery.

DESCRIPTION OF VESSEL.	1873.					1874.												1875.			TOTAL TONNAGE.
	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	
Steam Vessels -	..	1,984	..	515	800	..	1,290	652	..	..	..	..	1,488	..	1,371	56	536	566	451	2,239	11,948
Sailing „ -	6,312	6,901	3,694	9,459	5,848	5,652	3,590	5,648	10,203	6,127	5,345	6,403	2,746	6,120	6,574	6,226	2,729	4,690	7,377	1,600	113,244
TOTAL -	6,312	8,885	3,694	9,974	6,648	5,652	4,880	6,300	10,203	6,127	5,345	6,403	4,234	6,120	7,945	6,282	3,265	5,256	7,828	3,839	**125,192**

II.—Vessels ordered to be surveyed on account of Allegations of Overloading or Improper Loading.

DESCRIPTION OF VESSEL.	1873.					1874.												1875.			TOTAL TONNAGE.
	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	
Steam Vessels -	..	970	48	1,928	2,163	245	389	..	..	..	..	529	2,297	778	106	719	..	562	3,106	4,424	18,264
Sailing „ -	..	348	147	730	..	..	..	..	..	..	..	..	..	..	355	..	298	..	..	..	1,878
TOTAL -	..	1,318	195	2,658	2,163	245	389	..	..	..	..	529	2,297	778	461	719	298	562	3,106	4,424	**20,142**

TABLE VIII.

SHIPS REPORTED FOR SURVEY.

SUMMARY FROM 5TH AUGUST 1873 TO 31ST MARCH 1875.

I.—Alleged Defects in Hull, Equipments, or Machinery.

Description of Vessel.	Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Total Number of Vessels reported as defective. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.
Steam Vessels (iron) -	2	14	1	17	1	...	...	1	...	6	...	6	3	20	1	24
Sailing „ (wood)	11	412	16	439	...	13	1	14	1	19	...	20	12	444	17	473
Total -	13	426	17	456	1	13	1	15	1	25	...	26	15	464	18	497*

* Of these 497 Vessels 28 were dismantled or broken up.

II.—Alleged Cases of Overloading or Improper Loading.

Description of Vessel.	Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Total Number of Vessels reported as overladen or improperly laden. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.
Steam Vessels (iron) -	...	38	...	38	...	...	...	...	...	2	...	2	...	40	...	40
„ „ (wood)	...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	1
Sailing „ (wood)	...	6	...	6	...	...	...	...	...	1	...	1	...	7	...	7
Total -	...	45	...	45	...	...	...	...	...	3	...	3	...	48	...	48†

† These 48 Vessels were lightened or reloaded to the satisfaction of the Board of Trade Surveyors, and in no instance in which the Act has been put in force has the allegation of overloading or improper loading been found groundless.

LONDON:
Printed by GEORGE E. EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty.
For Her Majesty's Stationery Office.

"MERCHANT SHIPPING ACT, 1873."

RETURN

OF ALL

VESSELS ORDERED TO BE SURVEYED BY THE BOARD OF TRADE

UNDER THE

12th Section of the 36th and 37th Victoria, Chapter 85., from 1st April to 30th June 1875;

TOGETHER WITH

SUMMARIES

Showing the Number and Tonnage of Ships ordered to be surveyed, under the same Section, from 5th August 1873 to 30th June 1875.

(*In continuation of Parliamentary Paper* [C.—1233].)

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
PRINTED BY GEORGE EDWARD EYRE AND WILLIAM SPOTTISWOODE,
PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY.
FOR HER MAJESTY'S STATIONERY OFFICE.

1875.

[C.—1300.] *Price* 1½*d.*

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TABLE I.

SHIPS REPORTED FOR SURVEY (1st to 30th April 1875).

Cases in which the Act has been put in force.

VESSELS REPORTED AS DEFECTIVE IN HULL, EQUIPMENTS, OR MACHINERY.

A List of Vessels ordered by the Board of Trade to be surveyed, in pursuance of the Provisions of th 12th Section of the "Merchant Shipping Act, 1873," in consequence of alleged Defects in Hull, Equipments, or Machinery, from 1st to 30th April 1875.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Whether Laden or Unladen. Laden.	Unladen.	Unknown.	Total.	Result of Survey. Found Seaworthy.	Found Unseaworthy and ordered to be repaired or repaired after survey.	Dismantled or broken up after survey.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under	Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 16 to 20	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 21 to 30	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 31 to 40	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	1	..	1	..	..	..	..	..	1	..	1	..	2	..	2	..	2	..	..	..	..	..	..	..	..
to 41 to 50	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 51 to 60	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 61 to 70	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 71 to 80	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 81 to 90	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	1	..	..	..	1	..	..	..	..	..	..
to 91 to 100	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 101 to 150	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	3	..	3	..	..	..	..	..	..	..	..	2	1	..	3	..	3	..	..	..	1	..	..	..	..
to 151 to 200	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	1	1	2	..	..	..	..	..	..	..	..	1	1	..	2	..	1	..	1	..	..	..	..	..	..
to 201 to 250	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 251 to 500	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	1	2	3	..	..	..	..	..	..	..	..	..	3	..	3	..	1	..	2	..	1	..	..	..	..
to 501 to 750	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 751 to 1,000	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..
to 1,001 to 1,500	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,501 to 2,000	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2,001 & upwards	Steam "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing "	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steam Vessels		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Sailing Vessels		..	9	4	13	..	..	..	..	..	1	1	2	3	12	..	15	..	10	..	5	..	2	..	..	..	..
Total		..	9	4	13	..	..	..	..	..	1	1	2	3	12	..	15	..	10	..	5	..	2*	..	..	..	..

* In the remaining instances either there was no crew on board, or the crew expressed no opinion.

TABLE II.

SHIPS REPORTED FOR SURVEY (1st to 30th April 1875).

Cases in which the Act has been put in force.

VESSELS REPORTED AS OVERLADEN OR IMPROPERLY LADEN.

A List of Vessels ordered by the Board of Trade to be surveyed, in pursuance of the provisions of the 12th Section of the "Merchant Shipping Act, 1873," in consequence of Allegations of Overloading or Improper Loading, from 1st to 30th April 1875.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Gross Total.	Result of Survey. Found Seaworthy.	Result of Survey. Lightened or Re-loaded.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Unseaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Unseaworthy.
Tons.																				
15 and under	Steam Vessels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 20	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 30	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 40	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 50	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 60	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 70	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 80	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 90	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 100	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
to 150	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 151	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 200	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
to 250	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251	Steam „	...	2	...	2	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...
to 500	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 501	Steam „	...	3	...	3	...	...	...	...	...	...	...	...	3	...	3	...	...	...	...
to 750	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 751	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,000	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,001	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,500	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,501	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
to 2,000	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Steam Vessels		...	8	...	8	...	...	...	...	...	...	...	...	8	...	8	...	...	...	...
Sailing Vessels		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total		...	8	...	8	...	...	...	...	...	...	...	...	8	...	8	...	...	...	...

* In the cases included in this Table no opinion was expressed by the crews.

TABLE III.

SHIPS REPORTED FOR SURVEY (1st to 31st May 1875).

Cases in which the Act has been put in force.

VESSELS REPORTED AS DEFECTIVE IN HULL, EQUIPMENTS, OR MACHINERY.

A List of Vessels ordered by the Board of Trade to be surveyed, in pursuance of the provisions of the 12th Section of the "Merchant Shipping Act, 1873," in consequence of alleged Defects in Hull, Equipments, or Machinery, from 1st to 31st May 1875.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Whether Laden or Unladen. Laden.	Unladen.	Unknown.	Total.	Result of Survey. Found Seaworthy.	Found Unseaworthy and ordered to be repaired, or repaired after Survey.	Dismantled or broken up after Survey.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under	Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 16 to 20	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 21 to 30	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 31 to 40	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 41 to 50	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	2	1	3	..	..	..	..	..	..	..	..	..	3	..	3	..	2	..	1	..	..	..	..	..	..
to 51 to 60	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 61 to 70	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 71 to 80	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..
to 81 to 90	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	2	..	2	..	..	..	..	..	..	..	..	..	2	..	2	..	2	..	..	..	..	..	..	..	..
to 91 to 100	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	2	..	2	..	..	..	..	..	..	..	..	..	2	..	2	..	2	..	..	..	..	..	..	..	..
to 101 to 150	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	4	1	5	..	..	..	..	..	..	..	..	2	3	..	5	..	4	..	1	..	..	1	..	1	..
to 151 to 200	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	1	2	..	..	..	..	..	..	..	..	1	1	..	2	..	1	..	1	..	..	..	..	..	..
to 201 to 250	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	1	2	..	3	..	..	..	..	..	..	..	..	1	2	..	3	1	2	..	..	..	..	..	..	1	..
to 251 to 500	Steam „	..	2	..	2	..	..	..	..	..	..	..	..	2	..	..	2	..	2	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..
to 501 to 750	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to 751 to 1,000	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,001 to 1,500	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to 1,501 to 2,000	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2,001 & upwards	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steam Vessels		..	2	..	2	..	..	..	..	..	..	..	..	2	..	..	2	..	2	..	..	..	..	..	..	..	..
Sailing Vessels		1	15	5	21	..	..	..	..	..	..	..	..	5	16	..	21	1	15	..	5	..	..	1	..	2	..
Total		1	17	5	23	..	..	..	..	..	..	..	..	7	16	..	23	1	17	..	5	..	..	1*	..	2*	..

* In the remaining instances either there was no crew on board, or the crew expressed no opinion.

Note.—No vessels were detained on account of overloading or improperly loading during the month of May.

TABLE IV.

SHIPS REPORTED FOR SURVEY (1st to 30th June 1875).

Cases in which the Act has been put in force.

VESSELS REPORTED AS DEFECTIVE IN HULL, EQUIPMENTS, OR MACHINERY.

A List of Vessels ordered by the Board of Trade to be surveyed, in pursuance of the provisions of the 12th Section of the "Merchant Shipping Act, 1873," in consequence of alleged Defects in Hull, Equipments, or Machinery, from 1st to 30th June 1875.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Whether Laden or Unladen. Laden.	Unladen.	Unknown.	Total.	Result of Survey. Found Seaworthy.	Found Unseaworthy and ordered to be repaired, or repaired after Survey.	Dismantled or broken up after Survey.	Survey pending.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel. Found Seaworthy.	Found Unseaworthy.	Survey pending.
Tons. 15 and under	Steam Vessels	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to { 16 20	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to { 21 30	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to { 31 40	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to { 41 50	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to { 51 60	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to { 61 70	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
to { 71 80	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	1	..	1	..	..	..	..	..	2	..	2	..	2	..	..	..	..	..	..	1	..
to { 81 90	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..
to { 91 100	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to { 101 150	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..
to { 151 200	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to { 201 250	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	1	2	..	..	..	..	..	..	..	..	1	1	..	2	..	1	..	1	..	..	..	..	..	..
to { 251 500	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	2	2	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	2	..	..	..	..	..	..
to { 501 750	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to { 751 1,000	Steam „	..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
	Sailing „	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
to { 1,001 1,500	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	1	1	..	1	..	1	..	..	..	..	2	..	..	2	..	1	..	1	..	..	..	..	1	..
to { 1,501 2,000	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
2,001 & upwards	Steam „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Sailing „	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Steam Vessels		..	1	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..
Sailing Vessels		..	6	6	12	..	2	..	2	..	..	..	..	3	11	..	14	..	8	..	6	..	..	..	..	2	..
Total		..	7	6	13	..	2	..	2	..	..	..	..	4	11	..	15	..	9	..	6	..	..	..	..	2*	..

* In the remaining instances either there was no crew on board, or the crew expressed no opinion.

TABLE V.

SHIPS REPORTED FOR SURVEY (1st to 30th June 1875).

Cases in which the Act has been put in force.

VESSELS REPORTED AS OVERLADEN OR IMPROPERLY LADEN.

A List of Vessels ordered by the Board of Trade to be surveyed, in pursuance of the provisions of the 12th Section of the "Merchant Shipping Act, 1873," in consequence of Allegations of Overloading or Improper Loading, from 1st to 30th June 1875.

Tonnage.		Vessels reported by: Government Officers. Found Seaworthy.	Government Officers. Found Unseaworthy.	Government Officers. Survey pending.	Government Officers. Total.	Crews. Found Seaworthy.	Crews. Found Unseaworthy.	Crews. Survey pending.	Crews. Total.	Other Persons. Found Seaworthy.	Other Persons. Found Unseaworthy.	Other Persons. Survey pending.	Other Persons. Total.	Gross Total.	Result of Survey. Found Seaworthy.	Result of Survey. Lightened or Re-loaded.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed willingness to proceed in the Vessel.* Found Unseaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Seaworthy.	Of the Cases in which the Crews expressed unwillingness to proceed in the Vessel.* Found Unseaworthy.
Tons.																				
15 and under	Steam Vessels	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 16 to 20	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 21 to 30	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 31 to 40	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 41 to 50	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 51 to 60	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 61 to 70	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 71 to 80	Steam „	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 81 to 90	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 91 to 100	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 101 to 150	Steam „	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 151 to 200	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 201 to 250	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 251 to 500	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 501 to 750	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 751 to 1,000	Steam „	...	1	...	1	...	...	...	...	...	...	...	...	1†	...	1	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...
to 1,001 to 1,500	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
to 1,501 to 2,000	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2,001 & upwards	Steam „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Sailing „	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Steam Vessels -		...	2	...	2	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...
Sailing Vessels -		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total - -		...	2	...	2	...	...	...	...	...	...	...	...	2	...	2	...	...	...	...

* In the cases included in this Table no opinion was expressed.

† The boilers of this vessel were also found to be defective.

TABLE VI.

TABLE showing the TOTAL REGISTER TONNAGE of all VESSELS ordered by the BOARD OF TRADE to be surveyed under the 12th Section of the "MERCHANT SHIPPING ACT, 1873," in consequence of—I. ALLEGED DEFECTS in HULL, EQUIPMENTS, or MACHINERY, and—II. In consequence of ALLEGATIONS of OVERLOADING or IMPROPER LOADING, from 5th August 1873 to 30th June 1875.

I.—Vessels ordered to be surveyed on account of alleged Defects in Hull, Equipments, or Machinery.

DESCRIPTION OF VESSEL.	1873.					1874.											1875.						TOTAL TONNAGE
	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	
Steam Vessels	..	1,984	..	515	800	..	1,290	652	..	..	..	..	1,488	..	1,371	56	536	566	451	2,239	..	623	865	13,436
Sailing „	6,312	6,901	3,694	9,459	5,848	5,652	3,590	5,648	10,203	6,127	5,345	6,403	2,746	6,120	6,574	6,226	2,729	4,690	7,377	1,600	2,507	3,422	4,369	123,542
TOTAL -	6,312	8,885	3,694	9,974	6,648	5,652	4,880	6,300	10,203	6,127	5,345	6,403	4,234	6,120	7,945	6,282	3,265	5,256	7,828	3,839	2,507	4,045	5,234	**136,978**

II.—Vessels ordered to be surveyed on account of Allegations of Overloading or Improper Loading.

DESCRIPTION OF VESSEL.	1873.					1874.											1875.						TOTAL TONNAGE
	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	January.	February.	March.	April.	May.	June.	
Steam Vessels	..	970	48	1,928	2,163	245	389	..	..	..	..	529	2,297	778	106	719	..	562	3,106	4,424	4,583	..	1,168	24,015
Sailing „	..	348	147	730	..	..	..	..	..	..	..	..	..	..	355	..	298	..	..	..	..	..	..	1,878
TOTAL -	..	1,318	195	2,658	2,163	245	389	..	..	..	..	529	2,297	778	461	719	298	562	3,106	4,424	4,583	..	1,168	**25,893**

TABLE VII.

SHIPS REPORTED FOR SURVEY.

SUMMARY FROM 5TH AUGUST 1873 TO 30TH JUNE 1875.

I.—Alleged Defects in Hull, Equipments, or Machinery.

Description of Vessel.	Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Total Number of Vessels reported as defective. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.
Steam Vessels (iron) -	2	18	...	**2**	1	...	...	**1**	...	6	...	**6**	3	24	...	**27**
Sailing „ (wood)	12	454	18	**484**	...	16	...	**16**	1	20	1	**22**	13	490	19	**522**
„ „ (iron)	...	1	...	**1**	...	...	...	...	...	...	...	...	...	1	...	**1**
TOTAL -	**14**	**473**	**18**	**505**	**1**	**16**	...	**17**	**1**	**26**	**1**	**28**	**16**	**515**	**19**	**550***

* Of these 550 Vessels 31 were dismantled or broken up.

II.—Alleged Cases of Overloading or Improper Loading.

Description of Vessel.	Vessels reported by: Government Officers. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Crews. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Other Persons. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.	Total Number of Vessels reported as overladen or improperly laden. Found Seaworthy.	Found Unseaworthy.	Survey pending.	Total.
Steam Vessels (iron) -	...	48	...	**48**	...	...	...	...	...	2	...	**2**	...	50	...	**50**
„ „ (wood)	...	1	...	**1**	...	...	...	...	...	...	...	...	...	1	...	**1**
Sailing „ (wood)	...	6	...	**6**	...	...	...	...	...	1	...	**1**	...	7	...	**7**
TOTAL -	...	**55**	...	**55**	...	...	...	...	...	**3**	...	**3**	...	**58**	..	**58†**

† These 58 Vessels were lightened or reloaded to the satisfaction of the Board of Trade Surveyors, and in no instance in which he Act has been put in force has the allegation of overloading or improper loading been found groundless.

Marine Department,
Board of Trade,
July 1875.

LONDON:
Printed by GEORGE E. EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty.
For Her Majesty's Stationery Office.

MERCHANT SHIPS (DRAUGHT OF WATER RECORDS).

RETURN to an Order of the Honourable The House of Commons, dated 5 August 1875;—*for*,

COPY "of CORRESPONDENCE between Mr. *Plimsoll* and Others writing on his Behalf, and the Board of Trade, on the DRAUGHT OF WATER RECORDS furnished to him by the Board of Trade."

Board of Trade, 5 August 1875.

T. H. FARRER.

(*Mr. Reed.*)

Ordered, by The House of Commons, *to be Printed*, 11 *August* 1875.

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COPY of CORRESPONDENCE between Mr. *Plimsoll* and Others writing on his Behalf, and the Board of Trade, on the DRAUGHT OF WATER RECORDS furnished to him by the Board of Trade.

— No. 1. —

(M. 17,034.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 35, Victoria-street, 19 December 1874.

I SHALL be glad to have the Draught of Water Records still supplied to me.

The forms are ordered of Messrs. Vacher, and will be sent by them to you, if they are not already delivered.

I am sorry that there has been an interruption in the sending in of comments by me, or on my behalf, on these records.

When I went abroad at the close of the Session I made arrangements with a properly qualified person to send them in during my absence.

After some time he was unable to continue them, and Mr. Howell did not know to whom to apply, and since my return home, five weeks ago, I have been laid up entirely.

I shall resume the work myself now, and hope also to deal with the arrears, as there was a wonderful improvement in the loading perceptible before I went away, which could only be attributed, it appears to me, to the fact that you communicated my comments to the owners of the ships commented upon.

I venture again very respectfully to submit to you that it appears to me eminently desirable that you should take these records in the port of London and in the other ports where they are not now taken; they would supply unanswerable data of loading in such cases as the "*La Plata*" and "*The London*," &c., besides acting as a powerful moral check upon shipowners generally in those ports in the matter of loading.

I am, &c.

The Assistant Secretary, (signed) *Samuel Plimsoll.*
Marine Department, Board of Trade.

— No. 2. —

(M. 17,034.)

Board of Trade to Mr. *S. Plimsoll*, M.P.

Unseaworthiness—Draught of Water.

Board of Trade, Whitehall Gardens,

Sir, 31 December 1874.

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 19th instant, stating that you desire to have the Draught of Water Records still supplied to you, and suggesting that records should be taken in the port of London and in the other ports where they are not now taken.

In reply, I am to state, for your information, that although the Board do not believe overloading out of London or Liverpool to be common, they will endeavour to procure Records of Draught of Water from those ports; they accordingly propose to instruct some of their surveyors to take these additional records, and to increase the staff for this purpose.

The Board will gladly cause your forms to be filled up and forwarded to you as heretofore.

I am, &c.

S. Plimsoll, Esq., M.P., (signed) *Thomas Gray.*
35, Victoria-street, S. W.

— No. 3. —

(M. 2797.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 20 February 1875.

With reference to the "Records of Draught of Water," from the 8th instant to the 13th, I have to call your attention to the following cases of overloading:—On the 6th instant, the "*Cynthia*" sailed from Sunderland with only 21 inches, out of 14·1 feet depth of hold, above water; and on the same day the "*Flora*" sailed from North Shields, deeply laden. Passing on to the "Record" of the 11th instant, I observe that on the previous day the "*Arbutus*" left Greenock too deep, and that the "*Dorcas*" sailed from North Shields very much overladen. On the 10th instant, likewise, the "*Fenella*," "*Clarinda*," and the "*Galeed*" left the same port, the first-named deeply laden, and the other two very deeply laden, the "*Galeed*" having, moreover, a list. In the "Record" of the 6th instant my attention is called to the "*Pansy*," which on the previous day sailed from Barrow in a condition which I must describe as "very deep," since she had but 22 inches of clear side to a depth of hold of 14·4. On the 12th instant the "*Ann* and *Jane Richard*" left Glasgow deeply laden.

I remain, &c.

The Assistant Secretary, (signed) *Samuel Plimsoll*,
Marine Department, Board of Trade. per *Chas. P. Robert.*

(For Board of Trade reply, *see* Appendix A.)

— No. 4. —

(M. 2622.)

Mr. *T. C. Stamp* to Board of Trade.

Sir, 67, John-street, Sunderland, 17 February 1875.

In reply to yours of the 12th,* the steamship "*Dorcas*" arrived in the Tyne yesterday, and the captain reports that he experienced very heavy weather in going to Dunkirk, and that the vessel behaved very well indeed, and proved herself very safe with the cargo she had in.

I beg to refer you to my former letter respecting her depth when laden.

I remain, &c.

The Assistant Secretary, Board of Trade. (signed) *T. C. Stamp.*

P.S.—Mr. Smith has handed me your letter, addressed to him in error.

— No. 5. —

(M. 2690.)

Messrs. *John Fenwick & Son* to Board of Trade.

Sir, 44, Coal Exchange, London, 18 February 1875.

We have to acknowledge receipt of your letter of the 12th instant to Mr. James Joicey, of Newcastle-on-Tyne, acquainting us that the Board of Trade has been informed that the steamship "*Fenella*," of London, sailed from the port of North Shields with coals for London, having a clear side of 2 feet 10 inches, and that the Board of Trade are advised that with the clear side above indicated the vessel was deeply laden, and will be glad to be informed how she makes the voyage in question, and whether she is usually so deeply laden as is reported.

In reply, we beg to state that the master of the steamship "*Fenella*" does not admit the correctness of the information furnished to the Board of Trade, and especially that his vessel was "improperly or deeply laden."

That the steamship "*Fenella*" made her voyage as usual, and safely arrived at her destination.

That the masters of our steamers have instructions to never "improperly or deeply" load their steamers, and we have no reason to suppose they ever do so.

We are, &c.

The Assistant Secretary, (signed) *John Fenwick & Son.*
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 6. —

(M. 3190.)

Mr. *G. J. Hay* to Board of Trade.

Sir, Sunderland, 27 February 1875.

I HAVE the honour to inform you in reply to your communication, M., 24th February 1875, that the "*Clarinda*" made a remarkably fine passage of 13 days, including stoppages, on the voyage you refer to.

I do not know her draught of water or clear side when leaving Shields. I beg to request that I may be informed whether the clear side you state was measured by an agent of the Board of Trade, also the particular part of the vessel's side where such measurement may have been taken, and the draught of water that may have been reported to you at same time. Meanwhile, I can merely remark, that whatever the draught of water or clear side may have been, the vessel had in less weight than carried on several other occasions, when, not having received any complaint whatever, I can only infer she was considered not deeply laden.

I certainly regret you did not stop the vessel, having been advised she was deeply laden; if she was so, it was contrary to my most positive instructions. I would beg to suggest that the real object of the agitation, and present supervision, would be best attained by the stoppage of a vessel, and test of any doubt existing, *prior* to risk being encountered, in which you would have my hearty co-operation. I shall request the surveyors of Liverpool Underwriters' Registry to survey the vessel when next in England, and say what *is* a proper and reasonable draught of water in the interests of all concerned. I note you were not advised she was too deeply laden.

I am, &c.

To the Assistant Secretary, (signed) *G. J. Hay.*
Marine Department, Board of Trade.

P.S.—I should have said the vessel remained for 24 hours in dock after she was laden, so that you had ample opportunity in this case to have detained her.

G. J. H.

— No. 7. —

(M. 3190.)

Board of Trade to Mr. *G. J. Hay.*

Draught of Water.

Board of Trade, Whitehall Gardens,

Sir, 8 March 1875.

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 27th ultimo, relative to the loading of your vessel the "*Clarinda*" on her recent voyage to Civita Vecchia, and asking to be informed whether she was measured by a Board of Trade surveyor, and to be furnished with particulars of her draught of water and clear side on the occasion in question.

In reply, I am to inform you that the vessel was measured by this Board's officer at the break of the poop, that the draught of water recorded was 16 feet 6 inches forward, 17 feet 10 inches aft, and that the clear side was 2 feet starboard, and 2 feet 5 inches port, giving a mean clear side of 2 feet 2½ inches.

I am to add that when the Liverpool Underwriters' Registry have arrived at a conclusion as to the vessel's draught of water and freeboard, the Board of Trade will be glad to learn the particulars of their decision.

I am, &c.

G. J. Hay, Esq., Shipowner, (signed) *Thomas Gray.*
Sunderland.

— No. 8. —

(M. 3799.)

Mr. *G. J. Hay* to Board of Trade.

Sir, Sunderland, 9 March 1875.

I HAVE the honour to acknowledge your letter (M. 3190) dated 8th March 1875, containing the information desired. I beg to say that I have ascertained that the figures given are correct; and although you were not advised, nor do

you complain, that the vessel was *too* deep, I have communicated your complaint by telegram to the master, and await his reply, my instructions having been *most* positive not to load deep.

I have, &c.
(signed) *G. J. Hay.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 9. —

(M. 3862.)

Mr. *G. J. Hay* to Board of Trade.

"*Clarinda.*"

Sir, Sunderland, 10 March 1875.

I HAVE the honour to request that you will be pleased to inform me whether you have *ever before* been advised that the "*Clarinda*" was "*deeply laden,*" as I find from the master that she has been surveyed by your surveyor on several occasions, and that he has never had complaint or hint from any one that she was deeply loaded.

I have, &c.
(signed) *G. J. Hay.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 10. —

(M. 3862.)

Board of Trade to Mr. *G. J. Hay.*

Unseaworthiness.

Board of Trade, Whitehall Gardens,
19 March 1875.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 10th instant, asking whether they have ever before been advised that the steamship "*Clarinda*" was deeply laden, and in reply to inform you that there does not appear to be any record in this department of this nature previous to the occasion now in question, viz., when the vessel was about to sail from North Shields on the 10th ultimo, and was ordered by the Board of Trade to be detained and lightened till she had a clear side of 3 ft. 1 in., measured forward of the proof, but had sailed before the necessary instructions had arrived at North Shields.

I am, &c.
(signed) *Thomas Gray.*

G. J. Hay, Esq., Steamship Owner,
Sunderland.

— No. 11. —

(M. 4412.)

Mr. *G. J. Hay* to Board of Trade.

Sir, Sunderland, 20 March 1875.

I AM in due receipt of your letter of the 19th March, M. 3862. I now beg to say the "*Clarinda*" was measured by your agents for several voyages previous to the one you refer to, on which occasions she was always about the same draught, and I note that you were never advised she was deeply laden until this time. The vessel was over 20 hours in dock after she was laden, and had any doubt existed, there was ample time for her to have been stopped, when I should have been prepared to do, under practical survey, whatever might be considered reasonable and proper in the interests of all concerned.

I should consider a clear side of 37 inches excessive, but I am quite ready to be guided by the opinion of those who possess practical experience, and I beg to repeat I have requested the Committee of Liverpool Underwriters' Registry to survey the vessel when next in England, and fix a proper freeboard in the interests

interests of all concerned. I beg, therefore, to be informed whether your Board will be satisfied with the recommendations of such surveyors.

I cannot conclude without drawing attention to Sir C. Adderley's remarks in the House of Commons, as reported in the "Times" of 19th March, with respect to the "*Marquis of Lorne*" and the "*Dania*." The former vessel seems to be exactly similar in construction to the "*Clarinda*," and same depth of hold. Her freeboard, reported as 2 ft. 2½ in., was not objected to, whilst the "*Clarinda's*" at same figures is said to be insufficient.

——	——	Length.	Beam.	Depth.	——
		Ft. in.	*Ft. in.*	*Ft. in.*	
"*Marquis of Lorne*" - -	794 / 1,052	229 5	30 0	17 3	Water ballast.
"*Clarinda*" - - - - -	695 / 1,074	220 1	30 4	17 1	Do.

Both having long poops.

I shall be pleased to have some information to reconcile the freeboard of 3 ft. 1 in. named in your letter for "*Clarinda*," which at present I can only conclude has been written in error.

Awaiting reply,

I have, &c.

The Assistant Secretary, (signed) *G. J. Hay.*
Marine Department, Board of Trade.

— No. 12. —

(M. 5081.)

Mr. *G. J. Hay* to Board of Trade.

Sir, Sunderland, 3 April 1875.

I HAVE the honour to inform you that I have not received any reply to my letters, "Freeboard, '*Clarinda*,'" and the vessel being this morning ready to load, I have given instructions for her to be loaded (without prejudice) during the ensuing voyage with a minimum freeboard of 37 inches, in accordance with your letter, and I have to give notice that I shall look to your Board to pay me for any loss of freight on weight short carried between the freeboard you have named of 37 inches, and what I may conclusively prove would be a reasonable and proper freeboard in the interests of all concerned. I serve this notice with much reluctance, as I know the many and difficult duties your Board has to perform, and trust it will not be considered in any hostile spirit, but as the result of your naming a freeboard (I have *reason* to believe in error) which might involve me in serious consequences, should any accident occur with a less freeboard than you have named, and not withdrawn as a mistake. I feel, therefore, obliged to protect myself by thus writing, which I have delayed doing until the last moment, as it is now a considerable time since I first wrote upon the subject, with a view to avoid any possible difference of opinion and expense arising. The course will not probably entail so great an expense as detention, and I trust confirm my previous disposition to do what was right in an amicable spirit, and that your Board will recognise the peculiar necessity of the case as my justification for thus acting.

The vessel will probably load one cargo in fresh water; I have therefore ordered an allowance of *four* inches in such case.

I have, &c.

The Assistant Secretary, (signed) *G. J. Hay.*
Marine Department, Board of Trade.

— No. 13. —

(M. 5081.)

Board of Trade to Mr. *G. J. Hay.*

Unseaworthiness.

Board of Trade, Whitehall Gardens,

Sir, 5 April 1875.

I AM directed by the Board of Trade, with reference to your letters of the 20th, 25th, and 29th ultimo, relative to the loading of your vessel the "*Clarinda*," to state that this Board are advised that the clear side of 3 feet 1 inch, referred to in their letter of the 19th ultimo, was not greater than the circumstances of the case rendered necessary, looking to the voyage she was then intending to make, and the nature of her cargo.

I am further to state that this Board cannot admit that the "*Clarinda*" and the "*Dania*" are sister ships, inasmuch as one vessel has a break of little more than a third of her length, and the other has a full poop of little over half her length.

I am to add, that this Board will be glad to hear from you what freeboard is fixed by the surveyors of the Liverpool book, but that they are unable to say whether they will be satisfied with it until they know what it is, and for what voyages, cargoes, and season it is fixed.

With reference to your letter of yesterday, this Board cannot find that it contains anything leading to a modification of the views above expressed.

I am, &c.

G. J. Hay, Esq., Shipowner, Sunderland. (signed) *Thomas Gray.*

— No. 14. —

(M. 5280.)

Mr. *G. J. Hay* to Board of Trade.

Sir, Sunderland, 7 April 1875.

I HAVE the honour to acknowledge your letter of the 5th (M. 5081), and regret to find that it does not treat the matter in a way to relieve me from difficulty. I beg to say the vessel is loading for a similar voyage, and same nature of cargo; I can only therefore, with regret, confirm my notice of the 3rd.

I have referred to my press copy of letter 20th ultimo, and find I did *not* compare the "*Dania*" with "*Clarinda*," but the "*Marquis of Lorne*," giving the tonnage, dimensions, and construction of each boat, to show that they were similar in construction, and as nearly as possible alike in dimensions, and drawing attention to Sir C. Adderley's statement in the House of Commons, reported in "Times" 19th March, that the "*Marquis of Lorne*" was not objected to with a freeboard of 26½ inches, whilst the "*Clarinda*" with same figures is said to be insufficient, and no less than 37 inches required. The "*Dania*," I quite agree, is not a similar boat, but the "*Clarinda*" with *same* freeboard would have a greater reserve buoyancy. I trust your Board will now find they have committed an error, which might have involved me in grave responsibility.

I have, &c.

The Assistant Secretary, Marine Department, Board of Trade. (signed) *G. J. Hay.*

— No. 15. —

(M. 5280.)

Board of Trade to Mr. *G. J. Hay.*

Unseaworthiness.

Board of Trade, Whitehall Gardens,

Sir, 16 April 1875.

I AM directed by the Board of Trade to acknowledge your letter of the 7th instant, relative to the loading of the "*Clarinda*," and, in reply, to inform you that they ordered that vessel to be lightened for a particular voyage, and for a particular season of the year, and that their order is not to be taken as an instruction for any other voyage or any other season.

I am

I am to add, that the Board of Trade draw a distinction between the draught that a vessel may be allowed to proceed to sea with on the owner's responsibilty, and the draught that they order her to be lightened to after detention.

With regard to the "*Marquis of Lorne*," to which vessel you refer in your letter, the Board of Trade beg to remark that she was lying in almost absolutely fresh water.

I am, &c.

G. J. Hay, Esq., Shipowner, Sunderland. (signed) *G. J. Swanston.*

— No. 16. —

(M. 6095.)

Mr. *G. J. Hay* to Board of Trade.

"*Clarinda.*"

Sir, Sunderland, 20 April 1875.

I HAVE the honour to acknowledge your letter, dated 16th April (M. 5280), unfortunately some days too late to be acted upon; your letter, to which mine of the 7th April was an answer, applied the freeboard of 37 inches to voyage and cargo, and receiving no answer to such letter of the 7th April, informing you that the voyage and nature of cargo would be the same, and your Board not having retracted or modified the intimation that 37 inches was considered a proper freeboard, I did not consider myself justified in accepting the grave responsibility of allowing the vessel to proceed with a less freeboard than your various letters, during a long correspondence, maintained was proper, as I should have done under survey, giving your surveyors every opportunity of being perfectly satisfied, had your letter of the 16th been received in time. The vessel sailed from Cardiff for Messina, laden with coals, on the 12th April, having, as you required, a freeboard of 33 inches fresh water=37 inches salt. The vessel has been specially surveyed, and as soon as I receive the report I shall be prepared to ask your Board to recoup me for any loss sustained, when I trust by paying me the same you will be pleased to recognise that I have used *every possible* means to amicably settle a difference of opinion existing, and in the least costly form. I note your Board draw a distinction between owner's responsibility and the draught at which a vessel is allowed to proceed after being detained, but I beg to say that I do not desire a draught beyond what is fair and reasonable to all concerned, and responsibility beyond what that entails.

I have, &c.

The Assistant Secretary, Marine Department, Board of Trade. (signed) *G. J. Hay.*

— No. 17. —

(N. 6095.)

Board of Trade to Mr. *G. J. Hay.*

Unseaworthiness.

Board of Trade, Whitehall Gardens,

Sir, 27 April 1875.

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 20th instant, further relative to the loading of the steamship "*Clarinda*," and stating that that vessel sailed on the 12th instant with a freeboard of 33 inches, which you consider equivalent to 37 inches in salt water, being the freeboard to which the vessel was originally ordered to be lightened. In reply, I am to remind you of the obvious difference between a winter voyage and one commencing on the 12th of April.

I am to add, that the Board of Trade must reserve to themselves the right of dealing with each case upon its individual merits, upon full consideration of all the circumstances affecting it.

I am, &c.

G. J. Hay, Esq., Shipowner, Sunderland. (signed) *G. J. Swanston.*

— No. 18. —

(M. 7933.)

Mr. *G. J. Hay* to Board of Trade.

Sir, Sunderland, 25 May 1875.

In reply to your request, contained in letter 5th April (M. 5081), to be informed the decision of the Committee Liverpool Registry, with regard to freeboard recommended for "*Clarinda*," I have to inform you that although they had the vessel specially surveyed for the purpose, the Committee have informed me that after much consideration they have decided to wait the result of legislation before coming to any decision; under these circumstances, I have to ask that the question as to what loss I sustained by loading from Cardiff, with the freeboard named by your Board, may remain in abeyance until such time as the Liverpool Registry are able to give a recommendation, meanwhile I note that your Board have so far withdrawn from the position it took up, by desiring me to understand that the particular freeboard named was intended only to apply to the particular voyage and season complained of. I can only regret that such was not intimated to me at the time I addressed the Board, prior to the last loading and sailing of the vessel from Cardiff.

I have informed the master of your complaint that she was "deeply laden" leaving Tyne, and given him very particular instructions that it is not my wish for her to be deeply laden, so that no complaint may arise in future, and guided by what the President of the Board of Trade has stated in the House of Commons, I trust no complaint will have to be made.

I would beg to point out that the difference allowed "*Marquis of Lorne*, by your last letter, for loading in fresh water, would be 10½ inches less freeboard than intimated as proper for "*Clarinda*," same voyage, season, and cargo.

I have, &c.

The Assistant Secretary, (signed) *G. J. Hay.*
Marine Department, Board of Trade.

— No. 19. —

(M. 7933.)

Board of Trade to Mr. *G. J. Hay.*

Unseaworthiness.

Board of Trade, Whitehall Gardens,

Sir, 31 May 1875.

With reference to your letter of the 25th instant, asking that the question of your having sustained loss through the detention of the steamship "*Clarinda*" may remain in abeyance for the present, I am directed by the Board of Trade to inform you that they do not propose to entertain your claim in the matter to them when you make it.

I am, &c.

G. J. Hay, Esq., Shipowner, (signed) *Thomas Gray.*
Sunderland.

— No. 20. —

(M. 10,464.)

Mr. *G. J. Hay* to Board of Trade.

Sir, Sunderland, 16 July 1875.

The "*Clarinda*" will shortly be at Cardiff to load outwards for Ancona,—fuel. I beg to say I propose to load her with a freeboard of 2 ft. 6 in. top of deck at side to water at the fore part of the long poop. I do so under advice, and beg to ask whether you have any objections to this freeboard. Should the vessel load in fresh water at Cardiff it will be four inches less. I am not seeking your approval to avoid responsibility, but solely with a view to prevent expense and annoyance.

I am, &c.

The Assistant Secretary, (signed) *G. J. Hay.*
Marine Department, Board of Trade.

— No. 21. —

(M. 10,464.)

Board of Trade to Mr. *G. J. Hay.*

Unseaworthiness.

Board of Trade, Whitehall Gardens,
21 July 1875.

Sir,

In reply to your letter of the 16th instant, relative to the loading of your steamship "*Clarinda*," I am directed by the Board of Trade to inform you, that looking to the nature of the voyage and the season of the year, they will not, as at present advised, detain the "*Clarinda*" provided she has the freeboard indicated by you, viz., 2 feet 6 inches to the top of maindeck, measured just forward of the break of poop.

I am, &c.
(signed) *Thomas Gray.*

G. J. Hay, Esq., Shipowner,
Sunderland.

— No. 22. —

(M. 2484.)

Mr. *John T. Middleton* to Board of Trade.

North Shields, 15 February 1875.

Sir,

I was surprised at the contents of yours of the 13th instant;* I was on board of the steamship "*Galeed*" before she sailed, and I did not observe any list to port more than about *one inch.*

She was 16 feet 3 inches aft, and rather under 16 feet forward; I did not measure her side, but according to the drawings of the builder (Mr. Jas. Laing), at 16 feet 1½ inches mean draught she would have 2 feet 8 inches freeboard, which agrees with your report on the starboard side, and the list I make her to have; she was considered both by practical men and myself to be *bold*; she loads about that draught of water in winter, and a little deeper in summer.

She had on board 866 11-20 tons of coals (cargo), and 365 7-20 tons of coals (bunkers).

I have asked Mr. Charles Pearson, who piloted her to sea, if he had noticed her having a list to port; although his attention had been called to it by the chief engineer, saying the surveyor reported she had seven inches, yet Mr. Pearson failed to see more than about *one inch.*

Yours, &c.
(signed) *John Middleton.*

Assistant Secretary,
Marine Department, Board of Trade.

— No. 23. —

(M. 2484.)

Board of Trade to Mr. *John T. Middleton.*

Unseaworthiness.—Draught of Water.

Board of Trade, Whitehall Gardens,
25 February 1875.

Sir,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 15th instant, relative to the loading of the steamship "*Galeed*," and stating that you only observed that vessel to have a list of one inch when sailing from North Shields on the 10th instant, and in reply, to inform you that, looking to the report furnished by their surveyor on this subject, they see no reason to doubt the accuracy of his measurements, and to state that if the vessel loads as deeply again she may probably be detained.

I am to add, that the Board of Trade will be glad to learn how the vessel makes the voyage.

I am, &c.
(signed) *Thomas Gray.*

John T. Middleton, Esq., Steamship Owner,
North Shields.

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* This refers to the ordinary Circular. *See* Appendix (B.)

— No. 24. —

(M. 2869.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 22 February 1875.

On reference to the "Records of Draught of Water," from the 15th instant to the 18th, I observee the following cases of overloading: On the 12th instant the steamship "*Ebor*," sailed from North Shields too deep, and with a bad list, and the steamship "*Edward Williams*," left the same port deeply laden, and the "*Ocean*," very deeply. On the same day the "*Annie*" sailed from Greenock too deep, and on the 13th instant "*Carlotta*" left Leith with an insufficient clear side. Again, on the 15th instant, the steamship "*William Dawson*," laden with pig-iron, sailed from Middlesborough in a condition that may be designated "very deep." On the following day the "*Said*" left North Shields under similar circumstances, and the same remark applies, I think, to the "*John Straker*," which left Glasgow on the 16th instant, on which day I find that the "*Rose*" sailed from Swansea for Bona, deeply laden and with a bad list. Finally, in the "Record" of the 18th instant, I notice two cases, namely, that of the "*Dorian*," which sailed from Glasgow on the 17th, deeply laden, and that of the "*John Middleton*," which left North Shields for Ibrail, in a condition which must be characterised as "dangerously deep."

I remain, &c.
(signed) *Samuel Plimsoll*,
per *Charles P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade's reply, *see* Appendix A.)

— No. 25. —

(M. 2984.)

Mr. *R. Forrest* to Board of Trade.

Commercial-road, South Shields,
Dear Sir, 24 February 1875.

In reply to your letter of yesterday,* I beg to say the "*Ocean's*" draught of water was 15 feet 10 inches, and 16 feet, or a mean draft of 15 feet 11 inches.

Being in business, I never saw the ship, having left her loading to her master; but my brother commanded her 6½ years previous to her present master, and always filled her with the same coals, her draught being from 15 feet 9 inches to 16 feet, and she generally had half a keel more coals than what she has this voyage; she is a ship with a great deal of sheer, has no deck-houses, and is peaked at both ends; besides she has a quantity of American dunnage planks in her hold, and is loaded with Northumberland steam coals.

We do not consider her deeply laden at all, but she is, and has always been, considered a bold ship, and are quite under the impression there is a mistake about the figures represented as her clear side, of at least 1½ feet.

I respectfully ask you if you are not mistaken altogether? As our "*Ocean*" did not sail as stated in your letter on the 12th, but on the 15th instant, and was reported passing Dungeness on the 17th.

My brother has written to the surveyor of her underwriters, who was on board after she was loaded for his annual survey, and who would have found fault if she had been too deeply laden; he is an experienced and practical ship-master, and has been for a long time surveyor for the First Class Insurance Association, where the "*Ocean*" is insured, and if you would like his report, I shall be glad to send it to you after I get it.

I remain, &c.
(signed) *Robert Forrest*.

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 26. —

(M. 4829.)

Mr. *R. Forrest* to Board of Trade.

Commercial-road, South Shields,
28 March 1875.

Dear Sir,

I ENCLOSE the master of the "*Ocean's*" letter, and as by it there must have either been a mistake on your part, or on the part of your informant, as you will read by Captain Taylor's letter, the ship's draught of water was entered in the log book by the surveyor's directions.

Under the circumstances, as I have been charged with sending the "*Ocean*" to sea with only 2½ feet side, it is only fair, and due to me as a right, that a clear investigation be made, and that I be exonerated from such a charge.

You will also please return the accompanying letter, likewise Mr. Scorfield's to my brother David on this subject, and which I sent you with a request that you should return it, but which you have failed to do.

I remain, &c.
(signed) *Robert Forrest.*

To the Assistant Secretary,
Board of Trade.

— No. 27. —

(M. 4829.)

Board of Trade to Mr. *R. Forrest.*

Draught of Water.

Board of Trade, Whitehall Gardens,
5 April 1875.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 28th ultimo, asking for an investigation into the loading of the "*Ocean*" when leaving North Shields on the 12th of February, and in reply to state that the Board of Trade find from inquiries which they have caused to be made that there was a clerical error in the report of the freeboard of that vessel, and that the "*Ocean*" had a clear side of 3 feet 5¼ inches instead of 2 feet 5½ inches, as stated in their first letter.

In returning herewith the enclosures which accompanied your letters of the 25th February and 28th ultimo, I am to express the Board's regret that you should have been put to the trouble of this correspondence.

I am, &c.
(signed) *Thomas Gray.*

R. Forrest, Esq.,
Commercial-road, South Shields.

—No. 28. —

(M. 3079.)

Messrs. *G. Jinman & Co.* to Board of Trade.

Pier-street, Hull, 25 February 1875.

Sir,

WE beg to acknowledge receipt of your letter,* dated 24th instant, relating to our steamer "*Rose*," and, in reply, beg to inform you that the vessel passed Gibraltar yesterday morning, all well, having made an excellent passage to that place.

The vessel is usually carefully loaded and trimmed, and we can only say that if the steamer had no more side than that named by your informant, the weights given us by the shipper are incorrect, and I would respectfully suggest that if the surveyors were to see that the weights given on the wagons were correct, then many ships would go to sea with much more freeboard than they do at present.

Will

* This refers to the ordinary Circular. *See* Appendix (B.).

Will you kindly furnish us with the draught, fore and aft, as reported to you? According to the weights returned to us, she should have had a mean draught of 15 feet, and a clear side 3 feet in midships. An allowance of at least 3 inches on the draught of water in dock and out should be made.

Yours, &c.

To the Assistant Secretary, (signed) *G. Jinman & Co.*
Board of Trade.

— No. 29. —

(M. 3079.)

Board of Trade to Messrs. *G. Jinman & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
Gentlemen, 5 March 1875.

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 25th ultimo, and, in reply, to inform you that the draught of water of the steamship "*Rose*," when leaving Swansea on the 16th ultimo, is reported to have been 14 feet 10 inches forward, and 16 feet 2 inches aft.

I am to add that this Board's officers have no power to see that the weights of cargo given on the wagons are correct, as suggested by you.

I am, &c.

Messrs. G. Jinman & Co., (signed) *Henry G Calcraft.*
Pier-street, Hull.

—No. 30.—

(M. 3325.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 2 March 1875.

I BEG to call your attention to the following cases of overloading, as shown by the "Record of Draught of Water" of the 19th ultimo. The "*Chester*" left Cardiff, for Brindisi, coal-laden, on the 18th February, "deep," and on the same day, the "*John Straker*" sailed from Glasgow for Genoa in like condition, whilst the "*Wave*," with a cargo of coals, left West Hartlepool for Constantinople, "deep," and having a bad list. In the "Record" of the 20th ultimo, my attention is drawn to the "*Marquis of Worcester*," which sailed from Swansea on the 19th February, on a long voyage, deeply laden, whilst the steamship "*Glencoe*" left Middlesbro', and the "*Jubilee*," North Shields, in the same state. I find, moreover, that the "*Lebanon*" sailed from the latter port on the 19th ultimo, "very deep." Again, the "Record," of the 22nd ultimo, shows that on the 20th of February the "*Louisa*" left Cardiff "deep;" that the "*Damietta*" and the "*R. F. Bell*" were deeply laden when they sailed from Middlesbro' at the same date. It further shows that on the 20th ultimo the "*George Elliot*" and the "*Opah*" left North Shields "deep."

I remain, &c.

(signed) *Samuel Plimsoll,*
per *Chas. P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade's reply, *see* Appendix A.)

— No. 31. —

(M. 2864.)

Messrs. *Geo. Pyman & Co.* to Board of Trade.

Belgian Consulate, West Hartlepool,
Sir, 22 February 1875.

IN reply to yours of the 19th instant,* re steamship "*Chester*," we beg to inform you, that with a clear side of 2 feet 5 inches this steamer is qualified to proceed safely to any port in the Mediterranean, or to any port on the face of the

* This refers to the ordinary Circular. *See* Appendix (B.).

the globe. She has a great sheer; is covered in with long poop 4 feet high, engine-houses, &c., for about three-fourths of her entire length; has high combings to hatchways, and a great crop of deck, thus enabling her to free herself quickly from water taken on board. On arrival at Brindisi we shall not fail to inform you thereof.

We remain, &c.

To the Assistant Secretary, (signed) *Geo. Pyman & Co.*
Marine Department, Board of Trade.

— No. 32. —

(M. 2864.)

Board of Trade to Messrs. *Geo. Pyman & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
3 April 1875.

Gentlemen,

With reference to your letter of the 22nd February, relative to the loading of the steamship "*Chester*," when sailing from Cardiff on the 18th of that month, and stating you would inform them of the vessel's arrival at Brindisi, I am directed by the Board of Trade to state that they have not yet received the communication promised by you, and to request you to be good enough to inform them as soon as possible how the vessel made her voyage.

I am, &c.

Messrs. Geo. Pyman & Co., (signed) *C. Cecil Trevor.*
Steamship Owners,
Belgian Consulate, West Hartlepool.

— No. 33. —

(M. 5158.)

Messrs. *Geo. Pyman & Co.* to Board of Trade.

Belgian Consulate, West Hartlepool,
5 April 1875.

Sir,

In reply to your query of the 3rd instant, relative to steamship "*Chester*," we beg to inform you this steamer arrived at Brindisi on the 10th ultimo, did not sustain any loss or receive any damage whatever, but performed the voyage thereto in a manner highly creditable, and to the entire satisfaction of all concerned.

We deem it our duty to apologise to you for our not having, ere this, advised you of "*Chester's*" arrival at Brindisi; the only legitimate and conscientious excuse we have to plead is "pressure of business." The truth is, we had entirely lost sight of the circumstance, until reminded thereof by yours of the 3rd instant, now before us.

Your future communications shall command our best attention.

We are, &c.

The Assistant Secretary, (signed) pro *Geo. Pyman & Co.*
Marine Department, Board of Trade.

— No. 34. —

(M. 3949.)

Mr. *R. Ropner* to Board of Trade.

Sir,

West Hartlepool, 11 March 1875.

Being the owner of the "*Wave*" steamship, your communication of the 24th ultimo* was handed to me. In reply I beg to say that this vessel was not deeply and improperly laden. With the clear side she left this port; she is perfectly safe, having a great sheer both forward and aft, and she had a much greater

* This refers to the ordinary Circular. *See* Appendix (B.).

greater reserve buoyancy than many straight vessels that apparently in the opinion of the Board of Trade would be safely laden.

The "*Wave*" sailed on Thursday, the 18th of February, for Constantinople, and arrived there on Sunday, the 7th instant, making the passage in only 17 days, which is extraordinary quick.

Yours, &c.
(signed) *R. Ropner.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 35. —

(M. 3949.)

Board of Trade to Messrs. *R. Ropner & Co.*

Unseaworthiness.

Board of Trade, Whitehall Gardens,
22 March 1875.

Gentlemen,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 11th instant, stating that the steamship "*Wave*" was not deeply and improperly laden when leaving West Hartlepool on the 18th ultimo, and in reply, to inform you that if this vessel loads as deeply again she will probably be detained as unseaworthy.

I am, &c.
(signed) *Thomas Gray.*

Messrs. R. Ropner, Steamship Owners,
West Hartlepool.

— No. 36. —

(M. 3093.)

Messrs. *John E. Swan & Brothers* (Limited) to Board of Trade.

Middlesborough, Yorkshire, 25 February 1875.

Dear Sir,

IN reply to your communication of 24th instant,* *re* our steamship "*Glencoe's*" voyage hence to Grangemouth on 18th instant, we beg to say that she made the voyage in safety, and that she has for some time past had the same weight of iron on board, and same clear side.

Yours truly,
John E. Swan & Brothers, (Limited).
(signed) *Robert M. Simpson*, Manager.

Thomas Gray, Esq.,
Secretary, Marine Department,
Board of Trade.

— No. 37. —

(M. 3472.)

Messrs. *Kirby & Gillies* to Board of Trade.

Steamship "*Opah*."*

Quayside, Newcastle-on-Tyne,
4 March 1875.

Sir,

WE deferred writing until able to advise you that above steamer arrived, all well, at Gibraltar on the 2nd instant. We note you advised above ship was deeply laden, being in London at time of her departure. She was loaded entirely under Captain Penny's orders, and her cargo and bunkers, all told, weighed about 1,300 tons. She generally carries, all told, about 1,450, and yet always makes her passages safely. We believe never goes to sea overladen, and we are perfectly satisfied that if the persons that advise your Board saw this ship when laden, and are practical persons, that we would not be troubled with your circulars, as she is more like a light than a loaded ship.

Yours, &c.
(signed) *Kirby & Gillies.*

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 38. —

(M. 3347.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S. W., 3 March 1875.

A PERUSAL of the "Record of Draught of Water," of the 23rd ultimo brings out the following cases of over-lading:—The steamship "*Gilston*" sailed from Seaham, for Dunkirk, on the previous day, "deep." The "Record" of the 24th ultimo embraces four cases, namely, the "*Andalusia*," which sailed from Middlesbro' two days before; the "*Martin Wimer*," from North Shields, on the 22nd ultimo; the "*Astrea*," from Sunderland; and the "*Bessemer*" from Middlesbro,' both of which sailed on the 23rd ultimo; all these vessels were deeply laden. The "Record" of the 25th ultimo yields the following results:—The "*Comet*" left Ardrossan two days previously "very deep"; the "*Rose Schneider*" sailed from Barrow, on the 24th, with pig-iron, "deep"; the "*Coltstrup*," from Middlesbro', on the 23rd ultimo, in like condition, whilst the "*Elaine*" left North Shields in similar trim, if, indeed, the expression can be applied to a deficient clear side. The same "Record" discovers three other instances of overloading, from North Shields, on the 24th ultimo; those of the "*Lady Josyan*," with coal, for Brindisi; of the "*Solway*," for Gibraltar, both of which were "deep"; whilst the "*York*," bound for Alexandria, with a cargo of coal, sailed "very deep." In the "Record" of the 26th ultimo, I can only find one case to which exception can be taken, that of the "*Dora*," which left North Shields on the previous day, for Antwerp, deeply laden with coal.

I am, &c.

(signed) *Samuel Plimsoll*,

The Assistant Secretary, per *Charles P. Robert*.

Marine Department, Board of Trade.

(For Board of Trade's reply, *see* Appendix A.)

— No. 39. —

(M. 3417.)

Mr. *H. G. Spence* to Board of Trade.

South Stockton Iron Ship Yard, Stockton-on-Tees,

Dear Sir, 3 March 1875.

IN reply to your circular of 27th February,* the "*Bessemer*" went to sea on the 23rd with the same weight of iron and coals on board as she has been going with for the last year out of Middlesbro', and as usual quite safely.

T. Gray, Esq., Yours, &c

Board of Trade, London. (signed) *H. G. Spence.*

— No. 40. —

(M. 3268.)

Messrs. *G. T. Harper & Co.* to Board of Trade.

Oriental-place, Southampton,

Sir; 1 March 1875.

WE beg to acknowledge the receipt of your circular letter of the 27th ultimo,* directing attention to the draft of water of steamship "*Lady Josyan*" on leaving Shields, and stating that the Board of Trade were advised she was deeply laden, and requesting to be informed how she makes the voyage, and if she were usually laden so deeply. In reply, we beg to say your advice surprises us, as we had only on Saturday received a letter from the captain of the steamer in question, saying, that in consequence of the lightness of the cargo, he was not able to take his usual weight on board, but not having received any report of the draft of water,

* This refers to the ordinary Circular. *See* Appendix (B.).

water, we, immediately, on receipt of your letter, telegraphed the captain of another of our steamers, now at Newcastle, asking him to ascertain and reply, and we beg to enclose his answer. Further, for the information of your department, we have the honour to enclose an account of the outward cargoes for six voyages before the one in question, and by this you will see she has never before had so small a quantity on board as at the present time.

This vessel has been afloat nearly three years, has been regularly employed in the home and foreign trades, often carrying cargoes to Hamburg in mid-winter, and has never received any damage by sea, or damaged a ton of cargo; we may say she has quite a reputation amongst vessels of her class for quick passages, and excellent sea-going qualities. I may further observe that our instructions to our masters are simply to load their ships in the best way to ensure safety, and make quick voyages, that being the only way to secure the confidence of shippers and underwriters; and as we have to maintain our reputation, as well as being to a great extent our own insurers, we cannot afford to overload our ships.

We shall with pleasure forward you a copy of the log of this voyage, as soon as it is finished.

We have, &c.

The Assistant Secretary, (signed) *G. T. Harper & Co.*
Marine Department, Board of Trade.

Enclosures in No. 40.

TELEGRAM.

From *Ward*, care of Messrs. *Nelson, Donkin & Co.*, Quayside, Newcastle, to Messrs. *Harper & Co.*, Southampton.

SHALL get in dry dock Thursday; lie four days there. "*Josyan*" sailed one foot lighter than usual, drawing 16 feet.

1 March 1875.

DRAFT of Water Fore and Aft, with Quantity of Cargo and Bunkers of the Steamship "*Lady Josyan*" on Outward Voyages; as per Log-book.

DATE.	Place.	Cargo.	TONS.			DRAFT.	
			Cargo.	Bunkers.	Total.	Forward.	Aft.
						Ft. in.	Ft. in.
13 March - 1873	South Shields	Railway iron -	1148·15	190	1338·15	16 1	17 6
25 July - „	Cardiff - -	Coal - -	1114·18	267	1381·18	16 6	17 1
22 October - „	Shields -	„ - -	1140	275	1415	16 8	17 1
27 January - 1874	Cardiff - -	„ - -	1050	283	1333	16 0	16 6
24 August - „	„ - -	„ - -	1120	286	1406	16 7	17 5
25 May - „	„ - -	„ - -	1123	285	1408	16 4	17 6
27 February „	Newcastle -	„ - -	1131	171	1302	—	—

— No. 41. —

(M. 3313.)

Messrs. *G. T. Harper & Co.* to Board of Trade.

Oriental-place, Southampton,
2 March 1875.

Sir,

YESTERDAY we had the pleasure to send a reply to your circular of the 27th ultimo, reporting our steamship "*Lady Josyan*" as being deeply laden, and we now beg to hand you extract of letter from our senior captain, who happened

happened to be at the Tyne when she sailed, and who was for some time in command of the same ship, and to whom we telegraphed on receipt of your letter.

We will thank you to give this matter your further consideration and inquiries, as we conceive your informant must have been under a misapprehension.

We remain, &c.
(signed) *G. T. Harper & Co.*

To the Assistant Secretary,
Marine Department, Board of Trade.

Enclosure in No. 41.

Dear Sir, Newcastle-on-Tyne, 1 March 1875.

WAS never more surprised than when I got your telegram this morning, saying "*Josyan*" was reported too deep loaded; why she never had so little cargo and bunker coal in as she has this time, only 1,301 tons altogether, her draft of water being 16 feet. Her usual dead weight when loaded is 1,400 tons, and draft of water 16 feet 8 inches. Harlow came on board yesterday to see me, and was complaining that he had got such a small quantity of cargo in, but attributed it to the light quality of coal, the holds being full as usual.

I can say without fear of proof to the contrary, that out of the dozen (about) steamers laying loaded in the same dock, there was not one that had more freeboard than "*Josyan*" had when leaving this port this morning. There must be some mistake by the author of the report in the name of the ship.

(signed) *James Ward,*
Master, Steamship "King Ermyn."

G. T. Harper, Esq., Southampton.

— No. 42. —

(M. 3268.)

Board of Trade to Messrs. *G. T. Harper & Co.*

Draught of Water.

Board of Trade, Whitehall,
12 March 1875.

Gentlemen,

I AM directed by the Board of Trade to acknowledge the receipt of your letters of the 1st and 2nd instant, relative to the loading of the steamship "*Lady Josyan*," when sailing from North Shields on the 24th ultimo, and in reply, to state that, looking to the report of their surveyor on this matter, they see no reason to doubt the accuracy of his measurements.

I am to add that the Board of Trade would be glad to learn how the vessel makes her voyage.

I am, &c.
(signed) *Thomas Gray.*

Messrs. G. T. Harper & Co.,
Oriental-place, Southampton.

— No. 43. —

(M. 4232.)

Messrs. *G. T. Harper & Co.* to Board of Trade.

Oriental-place, Southampton,
17 March 1875.

Sir,

WE are in receipt of your letter, M. 3268, of 12th instant, and now beg to inform you that the "*Lady Josyan*" arrived at Malta all well on Monday last.

We have instructed the captain to forward from Brindisi a copy of the ship's log, and shall have much pleasure in sending it for your information on its receipt.

We have, &c.
(signed) *G. T. Harper & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 44. —

(M. 4753.)

Messrs. *G. T. Harper & Co.* to Board of Trade.

Oriental-place, Southampton,
25 March 1875.

Sir,

In accordance with the request made in your circular letter of the 12th instant, we now have the honour to forward, for the information of your department, a copy of the log of our steamship "*Lady Josyan*," from the Tyne to Brindisi, together with a letter from the master in reply to ours informing him that the ship had been reported as too deeply laden.

We would respectfully call your attention to the master's letter, and to the entries in the log showing the state of the weather encountered on the voyage out, and the ship's behaviour therein, and to ask if your department still thinks she was overloaded; if so, we shall be obliged by your informing us by what rule we are to be guided in future as to the loading of our ships? Hitherto we have engaged and employed the most experienced and able masters we could find, and have instructed them on all occasions to load the ships to the trim that would enable them to make their voyages with perfect safety and regularity. Believing these men knew something as to the proper load the ship they sail in should carry, as well as having a very strong inducement in not overloading (that of self-preservation), we have been pretty well content to leave this matter to them, but if, as appears, the practical knowledge and experience of our masters are to be ignored altogether, we must request the Board of Trade to provide us with a reliable rule to guide us.

We intend, with your permission, to publish the correspondence relating to this steamer in the "Shipping Gazette."

We have, &c.
(signed) *G. T. Harper & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

Enclosure in No. 44.

Extract of Log Steamship "*Lady Josyan*," from *Tyne* to *Brinsidi*, viâ *Malta*.

1 March	Left Tyne, strong east wind and sea; 11 a.m., passed Souter Point, ship rolling very easy; 8 p.m., Flamborough Head, strong E.S.E. gale, with snow and high sea, ship knocking about a deal.
2 „	Same weather, with heavy snow squalls; 10.30 a.m., slowed engines; 11 a.m., sighted broken water on Hasborough Sands; hauled to northward; noon, weather clearer, went full speed and sighted Cromer; 4.30 p.m., passed Newarp; less wind and sea, ship going very easy; midnight, passed Galloper.
3 „	Fresh E.N.E. wind and clear weather; 3 a.m., passed North Sand Head; 5 a.m., South Foreland; 8, Dungeness; 11.30, Beachy Head; noon, fresh breeze and heavy weather; 6 p.m., St. Catherine; 10 p.m., engine feed-valve joint of starboard boiler gave way; blew boiler out to repair it.
4 „	A.M., fresh S.E. wind and cloudy weather; 2 a.m., repairs of boiler finished, went full speed; 5 a.m., passed Start Point; 6 p.m., passed Ushant; increasing S.E. wind and sea.
5 „	Heavy S.E. gale with very high sea; 8 a.m., terrific gale with very high sea, slowed engines; 10, split fore-trysail and blew away main stay-sail; noon, increasing gale with very high sea, washed away part of bulwarks on fore-part of bridge; steaming half speed; 5 p.m., wind more moderate, S.W., but very heavy sea; 8 p.m., went full speed.
6 „	Head S.W. gale with high sea, ship labouring heavily; 5 a.m., went dead slow; 6 a.m., heavy squalls of rain; noon, very heavy S.S.W. gale with terrific sea, ship rolling and labouring heavily, and shipping large quantities of water, going under easy steam; 4 p.m., same weather with heavy rains, shipped a heavy sea and carried away fore-trysail outhaul and washed jolly boat and hawsers off main hatch into lee scuppers; got them all secured again; 8 p.m., gale moderating, went full speed.

7 March

7 March	Strong S.W. gale with high sea, went half speed ; p.m., weather moderating, went full speed, heavy swell, ship rolling heavily.
8 „	Strong S.S.W. wind and cloudy, with heavy swell.
9 „	Light southerly winds and fine; 8 a.m., passed Burlings; noon, Cape Rocca.
10 „	Brisk S.E. winds and fine; 2 a.m., passed St. Vincent; p.m., light variable winds and fine; midnight, passed Gibraltar.
11 „	Brisk westerly winds and fine; 5 p.m., passed Cape de Sata.
12 „	Brisk S.W. winds and fine; 9 p.m., passed Algiers.
13 „	Light winds and fine; 3.30 p.m., passed Seven Capes; midnight, strong west wind with confused sea.
14 „	Brisk N.W. wind and fine; 5 a.m., Galita Island; noon, Dog Rocks; 5 p.m., Cape Bon.
15 „	Brisk S.W. wind and fine; 5 p.m., arrived in Malta.
16 „	Coaled 210 tons, and proceeded at noon, strong N.E. wind and sea.
17 „	Light winds and fine.
18 „	Light winds and cloudy; 3 p.m., arrived in Brindisi.

Draft of water on leaving Tyne was 16 feet 5 inches aft, and 15 feet 10 inches forward 2 feet 7 inches free board.

Cargo 1,131 tons, and bunkers 170 tons; being 100 tons less than usual.

(signed) *Alfred Harlow*, Master.
Alex. Forsyth, Mate.

Gentlemen, "*Lady Josyan*," Brindisi, 20 March 1875.

YOURS of the 16th instant to hand; I am very much surprised to hear that you have had complaints of the ship being overladen; I can assure you she was not overladen, having 100 tons less cargo than she usually carried with safety, and nearly 10 inches lighter in her draught, and the weather we went through in the North Sea and Bay of Biscay ought to speak for itself and satisfy the Board of Trade that the ship was not overladen, if they insist on calling her overladen. I do not know what they want the ship to be loaded to; there was no complaint made to me before leaving the Tyne, as the ship lay five days after she was loaded; why did they not make their complaint to me before leaving, as they had ample time? I enclose an extract of log, and I could safely say everybody on board would say the ship was flying light; she would not have been so light had I been able to get more cargo into her.

Hoping you will be able to satisfy the Board of Trade as regards the overloading,

Yours, &c.

Messrs. G. T. Harper & Co., Southampton. (signed) *Alfred Harlow.*

— No 45. —

(M. 4753.)

Board of Trade to Messrs. *G. T. Harper & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
8 April 1875.

Gentlemen,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 25th ultimo, enclosing a letter from the master of the steamship "*Lady Josyan*," and asking by what rule you are to be guided in loading your vessels, and in reply, to state that the Board of Trade are not prepared, as at present advised, to furnish a rule as requested, but must, in carrying the law into effect, deal with each case on its own merits as it comes before them.

I am, &c.

Messrs. G. T. Harper & Co., Oriental-place, Southampton. (signed) *Thomas Gray.*

— No. 46. —

(M. 3659.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 6 March 1875.

An inspection of the "Records of Draught of Water," the dates of which I give in parentheses, appears to show the following cases of overloading:—The steamship "*Malaga*" (7th January), which left Middlesborough on the previous day, "dangerously deep"; the steamship "*Havre*," from Swansea, at the same date, "very deep"; the "*Kynance*" (8th January), from Cardiff, on the sixth of that month, "very deep," and with a bad list; and the "*Rosa*," on the same day, from Leith, "deep." At the same time, the "*Camel*" sailed from Swansea very deeply laden, though in her case it must be allowed that the voyage, under ordinary circumstances, would not be a dangerous one. A vessel, however, should put to sea prepared to meet the worst weather. Still referring to the "Record" of the 8th January, I note that on the previous day the "*Eugenie*" and the "*Joseph Nicholson*" left North Shields deeply laden, whilst in the "Record" of the 12th January, I find that the "*Emily Warbrick*" sailed from Liverpool on the day before "deep"; that the "*Esther Smeed*" left North Shields on the 9th January "very deep," and the "*George Elliot*" "deep." The "Record" of the 14th January indicates the sailing of the "*G. N. Wilkinson*" from North Shields, on the 11th, very deeply laden with coal, and on a dangerous voyage. The "Record" of the same date affords three instances of overloading from the same port, on the 13th January, viz., the "*Zeus*," the "*Campanile*," and the "*Jubilee*"; whilst on the same day the "*Doctor*" sailed from Swansea, for Lisbon, "deep." In the "Record" of the 15th January, I find that the "*Kelpie*" left North Shields deeply laden, and in that of the next day that the "*Daisy*" sailed from Swansea for Corunna "very deep," and with a bad list, and the "*Pansy*" very deep." The "Record" of the 18th January shows that the "*Agnes Jack*" was deeply laden when she left Barrow on the 14th of that month, at which date the "*Napoli*" sailed from Glasgow for the Mediterranean "very deep." The same "Record" indicates that on the 16th January the "*Andes*" left London for Valparaiso, "very deep," and the "*Mary Ann*" North Shields for Jersey, "very deep." A glance at the "Record" of the 20th January shows that the "*Elaine*" sailed from North Shields on the previous day, "very deep"; and that the "*Tit Bit*" left Cardiff, at the same date, under similar circumstances. The "Record" of the 21st January gives the "*Eagle*" as deeply laden when she sailed from Ardrossan two days before. The same "Record" points to the "*Coomassie*" having left North Shields on the 20th for Barcelona, "very deep," and with a bad list. The "Record" of the 22nd January shows that the "*Fern*" quitted Cardiff for Barbados very deeply laden, and that the "*Minerva*" sailed from Glasgow "dangerously deep," and with a very bad list. By the "Record" of the following day, I perceive that on the 21st January the "*Kate*" left Ardrossan "deep"; that on the 22nd the "*Serantes*" sailed from Barrow "very deep"; that the "*Norma*" left Cardiff under like conditions, and that the steamship "*Alfgar*" sailed from North Shields "very deep." The "Record" of the 25th January denotes that the "*Minerva*" sailed from Glasgow two days previously "deep." This is the same vessel that left the port on the 21st "dangerously deep," and with a very bad list; circumstances which seem to have necessitated her return. The same "Record" tells of the "*H. D. Pochin*" having sailed from Glasgow the day before for Algiers, very deeply laden, and of the "*Royal Sovereign*" having left Sunderland "deep." On the 25th January (*vide* "Record" of the 26th), the "*Redesdale*" sailed from Glasgow for Constantinople, "very deep," and with a bad list; and on the same day the "*Madge Wildfire*" left Liverpool "deep." The "Record" of the 27th January gives two cases of overloading at Swansea; those of the "*Iota*" and the "*Anna Dixon*," the former bound on a long voyage, "very deep." On the 27th January, North Shields supplies three instances of overloading; the steamship "*Holmside*" "very deep," the steamship "*Emerald*" "deep," and the steamship "*Wastdale*" "very deep," with a bad list. On the 27th of January it appears that the "*Florence Richards*" left Barrow "deep," and the "*Foyle*" the next day, "very deep." The "Record" of 30th January, denotes that the "*Agenora*"

"*Agenora*" sailed from North Shields two days before, very deeply laden. That of the first ultimo shows that on the 30th January the "*Vildosala*" left Dublin "deep"; that the "*Baron Hambro'*" sailed from Hull, "deep," on the 29th January, and the "*Gladstone*," from Middlesborough', on the 30th, "deep." At the latter date, the steamship "*Murton*" left Swansea "deep," and on the second ultimo the "*Palma*" sailed from West Hartlepool "dangerously deep." On the same day (*see* "Record" of the third ultimo), the "*Fenella*" left North Shields "deep," whilst on the ninth ultimo, the "*Marion*" sailed from Glasgow "very deep." On the eighth ultimo, the "*Huntcliff*" left Middlesborough deeply laden. These instances of overloading are numerous enough for so limited a period, yet they do not represent the true state of the case, for there are several "Records" within the dates, on which, for the moment, I cannot lay my hands.

I have, &c.
(signed) *Samuel Plimsoll*,
per *Chas. P. Robert.*

The Assistant Secretary, Marine Department,
Board of Trade.

(For Board of Trade's reply, *see* Appendix A.)

— No. 47. —

(M. 647.)

Mr. *J. P. Hornung* to Board of Trade.

"*Malaga.*"

Middlesborough-on-Tees,
12 January 1875.

Sir,

Your communication,* dated yesterday, relative to the above vessel, is before me. She arrived at Calais on the 8th instant, left on the 9th instant, and reached here on the 11th instant.

In my opinion she was not deeply laden, and never is.

Yours, &c.
(signed) *J. P. Hornung.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 48. —

(M. 1144.)

Messrs. *Burgess, Shaddick & Co.* to Board of Trade.

"*Havre*" Steamship.

Cambrian Chambers, Swansea,
21 January 1875.

Sir,

In reply to your circular,* dated 11th instant, addressed Mr. J. H Burgess, we beg to say that the "*Havre*" made the voyage in question in her usual manner, and without casualty, and that your informant must have been in error in supposing her to have been too deeply laden. Our standing instructions to our captains are not to overload their boats, but rather to err on the other side.

We are, &c.
(signed) *Burgess, Shaddick & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 49. —

(M. 884.)

Mr. *E. Handcock* to Board of Trade.

"*Kynance.*"

Sir, Falmouth, 15 January 1875.

I BEG to acknowledge the receipt of your circular* of the 13th instant, respecting this steamer, and in reply beg to say that I am not in habit of loading any of my vessels too deep, and never have, nor will.

The "*Kynance*" arrived at Rouen all well, after a passage of 50 hours from Cardiff to Havre Roads, although the weather was very bad.

This steamer has a long poop and great spring, and I do not consider her too deep.

Yours, &c.

The Assistant Secretary, (signed) *Edmund Handcock.*
Marine Department, Board of Trade.

— No. 50.—

(M. 1024.)

Mr. *G. Smeed* to Board of Trade.

Sir, Sittingbourne, 19 January 1875.

IN reply to yours of the 16th instant,* Mr. Smeed bids me respectfully state that he should judge that two feet six inches clear side for the "*Esther Smeed*" was ample, as she is barge built. Any other information in reference how she makes the voyage, &c., he will be most happy to give you.

Yours, &c.

Thos. Gray, Esq., (signed) pro *G. Smeed,*
Board of Trade, Whitehall Gardens. *A. Drake.*

— No. 51. —

(M. 1024.)

Board of Trade to Mr. *G. Smeed.*

Draught of Water.

Board of Trade, Whitehall Gardens,

Sir, 27 January 1875.

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 19th instant, relative to the loading of the "*Esther Smeed*" when sailing from North Shields on the 9th instant, and in reply to state that they will be glad to be informed how the vessel makes her voyage.

I am, &c.

G. Smeed, Esq., Shipowner, (signed) *Thomas Gray.*
Sittingbourne.

— No. 52. —

(M. 1196.)

Messrs. *Thos. Turnbull & Son* to Board of Trade.

Whitehall Dockyard, Whitby,

Sir, 22 January 1875.

OUR steamer "*Daisy*"* is bound to Ancona and not to Corunna as alleged. Our instructions to masters are not to load their vessels too deep; in this case we do not consider the "*Daisy*" too deeply laden; she is a small vessel, and has a good

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* This refers to the ordinary Circular. *See* Appendix (B.).

a good sheer, a topgallant-forecastle, and a four-feet raised quarter-deck extending forward to the bridge, and with a minimum mean clear side of 1′ 8½″; we consider her in fair trim. We have, of course, no control over the loading of cargo so far as list is concerned, but think Captain Lethe would be able to trim the vessel upright before leaving the Mumbles.

We are, &c.

Thos. Gray, Esq. (signed) *Thos. Turnbull & Son.*

— No. 53. —

(M. 1196.)

Board of Trade to Messrs. *T. Turnbull & Son.*

Draught of Water.

Board of Trade, Whitehall Gardens,

Gentlemen, 29 January 1875.

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 22nd instant relative to the loading of the "*Daisy*" on leaving Swansea on the 15th instant, and in reply to state that they will be glad to learn how the vessel makes her voyage.

I am, &c.

Messrs. Thomas Turnbull & Son, (signed) *Thomas Gray.*
Whitehall Dockyard, Whitby.

— No. 54. —

(M. 1541.)

Messrs. *Henderson Brothers* to Board of Trade.

The "Anchor" Line of Transatlantic Peninsular and Mediterranean Steam Packet Ships, 45 and 47 Union-street, Glasgow,

Sir, 28 January 1875.

We duly received your communication* of 22nd instant with reference to the draft of water of our steamship "*Napoli.*"

We have now to state, for the information of the Board of Trade, that the "*Napoli*" has arrived safely at Lisbon, and would refer to the remarks contained in our letter of 11th December last with reference to the steamship "*Dorian,*" which apply equally to the "*Napoli.*"

We are, &c.

The Assistant Secretary, (signed) *Henderson Brothers.*
Marine Department, Board of Trade.

— No. 55. —

(M. 2115.)

Mr. *H. Berry* to Board of Trade.

Sir, Jersey, 6 February 1875.

In reply to yours of the 22nd January,* in reference to the "*Mary Ann,*" of Guernsey, I beg to inform you that the above vessel has had a very successful voyage from Shields to Jersey, not having met with any mishap of any kind; although the voyage was rather tempestuous, the said vessel; has neither strained nor made water during the voyage. In reference to the loading of said ship,

* This refers to the ordinary Circular. *See* Appendix (B.).

ship, she was laden a trifle deeper than usual, in consequence of having bricks and clay at the bottom of the cargo. I shall be happy to give any further information that may be required.

I am, &c.
(signed) *H. Berry.*

Thomas Gray, Esq.,
Board of Trade, Whitehall.

— No. 56. —

(M. 1992.)

Mr. *Philip H. Laing* to Board of Trade.

Steamship "*Elaine.*"

Sir, Sunderland, 5 February 1875.

Enclosed is an extract from Captain Riches' letter, in answer to yours of the 23rd ultimo.* On the voyage in question she was drawing 16 feet 1 inch aft, and 14 feet 9 inches forward, which gives a mean draft of 15 feet 5 inches, and this would give her a side of 2 feet 5 inches, and not 2 feet 2 inches as was represented to you. She has repeatedly made her voyages drawing the same depth with safety, and for a vessel of her depth of hold I consider she has sufficient side, and will compare favourably with other steamers running in the coal trade between the Tyne and London during all states of the weather.

Yours, &c.
(signed) *Philip H. Laing.*

The Assistant Secretary,
Marine Department, Board of Trade.

Enclosure in No. 56.

I beg to state about the voyage. I sailed with a gale from the West to W. S. W., and continued to blow until I arrived in London river. I kept my own watch and part of the mate's watch. I was also on deck, and did not get my feet wet, wearing only a pair of thick shoes.

— No. 57. —

(M. 2696.)

Mr. T. *Jenkins* to Board of Trade.

Dear Sir, Skibbereen, 16 February 1875.

I beg to inform you that* my vessel called the "*Tit-Bit,*" of Cardigan, is properly marked draught of water on each side of her stem and stern post in figures in accordance of the Merchant Shipping Act; when at Cardiff last I took in my cargo night time, a very bad trimming, never seen the vessel so deeply laden by the stern, cause my after figure of her water draught little under water; when in a proper trim both figures fore and aft above water. I can assure you I did not neglect in marking my water draught.

I am very particular in not deeply loading my little vessel; out all weathers, summer and winter; she is a good sea boat; never had a cause to complain of being deeply laden. Cardiff dock water, very weak, allowing three inches lighter in salt water.

I remain, &c.
(signed) *Thomas Jenkins,*
Master of the "*Tit-Bit,*" of Cardigan.

To the Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 58. —

(M. 2696.)

Board of Trade to Mr. *T. Jenkins.*

Draught of Water.

Board of Trade, Whitehall Gardens,
Sir, 1 March 1875.

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 16th ultimo, relative to the marking of the "*Tit-Bit*" for recording her draught of water, and in reply to inform you that, in order to complete her marking, another figure should be placed on the vessel's counter, and to request you to have this addition carried out at your earliest convenience.

I am, &c.
(signed) *Thomas Gray.*

Mr. Thomas Jenkins, Shipowner,
Newport, Pembrokeshire.

— No. 59. —

(M. 1628.)

Messrs. *Breslauer & Co.* to Board of Trade.

85, Gracechurch-street, London.
Sir, 29 January 1875.

IN reply to your communication* of yesterday respecting "*Coomassie*," beg to say that the list referred to would doubtless be rectified by the time she got clear of the Tyne, by using coals out of her starboard bunker.

She was not deeply or improperly laden as the captain wrote us on a previous voyage (when she was about the same draught), as follows, "I am very much disappointed in the carrying of the ship, she will stand to be good 18 inches deeper when we get cargo that we will have room for," and we are positive he would not have made such an assertion had it been incorrect, as being a man of great experience and ability we leave the loading entirely to his judgment. For your guidance she made an exceedingly quick passage on the voyage alluded to above when other vessels came to grief.

We remain, &c.
(signed) *Breslauer & Co.*,
Managing Owners.

Thos. Gray, Esq., Board of Trade.

— No. 60. —

(M. 1628.)

Messrs. *Breslauer & Co.* to Board of Trade.

85, Gracechurch-street, London,
Sir, 3 February 1875.

REFERRING to our letter of the 29th ultimo, now beg to inform you that the "*Coomassie*" arrived safely at Barcelona yesterday. Our telegram states, she experienced exceedingly bad weather during the passage.

We remain, &c.
(signed) *Breslauer & Co.*

Thomas Gray, Esq., Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 61. —

(M. 1621.)

Mr. *E. Peck* to Board of Trade.

10 5 St, Clements, Ipswich,
29 January 1875.

Sir,

In reply to your letter* dated 25th January 1875, respecting the loading of the schooner "*Fern*" of this port, I beg respectfully to inform you the master has been in her for eight years, and has always sailed her to my entire satisfaction, and no complaint has ever been made as to the schooner being overloaded; and I am informed the vessel took in several tons less than usual. I take the liberty to say this vessel has always been considered a fine sea boat, and has a great deal of shear, not less than three feet, which gives her a lofty bow and quarter.

I am, &c.
(signed) *Edw. Peck.*

— No. 62. —

(M. 1621.)

Board of Trade to Mr. *E. Peck.*

Draught of Water.

Board of Trade, Whitehall Gardens,
4 February 1875.

Sir,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 29th ultimo, relative to the loading of the "*Fern*" when leaving Cardiff on the 21st ultimo for Barbadoes, and in reply to state that they will be glad to learn how the vessel makes her voyage.

I am, &c.
(signed) *Thomas Gray.*

Edward Peck, Esq.,
105, Saint Clements, Ipswich.

— No. 63. —

(M. 5230.)

Mr. *E. Peck* to the Board of Trade.

105, St. Clements, Ipswich,
6 April 1875.

Sir,

In reply to your letter dated 4th February 1875, relative to the loading of the "*Fern*" at Cardiff, I beg to state the said vessel arrived all safe and well at Barbadoes, 11th March 1875.

I am, &c.
(signed) *Ewd. Peck.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 64. —

(M. 3107.)

Messrs. *Johnson, Limpricht & Co.* to Board of Trade.

Newcastle-upon-Tyne, 25 February 1875.

Sir,

Your communication of the 27th ultimo* came duly to hand, to which I deferred replying until I had an opportunity of speaking with the captain of steamship "*Serantes*" on the subject. I find on the voyage referred to the "*Serantes*" was not more deeply laden than usual, and that she arrived at Rotterdam, all well, after encountering a fearful storm off Scilly Islands on the 25th

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* This refers to the ordinary Circular. *See* Appendix (B.).

25th ultimo, during which, had she been too deeply laden, she would not probably have come out of it without some mishap. We built this steamer for the ore trade, and to carry the largest cargo on the least water, to suit Bilboa and other shallow water ports; to get these results it was necessary to give good length and good beam, with little depth of hold as practicable, and model the steamer so as to have a good spring or sheer, and on this a long and high topgallant forecastle, long bridge amidships, and a long half poop. Therefore, being a shallow boat to begin with, viz., 13½ feet fully laden, and her great sheer, gives the impression to any one not knowing the lines and dimensions, viz., 210 by 29 by 14, of the boat, that she was deep, so she would be with (as you say) 1 foot 5 inches side, if she drew 16 or 16½ feet, which many steamers do carrying the same cargo. We may say the "*Serantes*" is built on the principle of the Dutch galliot or our billyboy schooner, low and flat bottomed, and good spring or sheer, they seem when loaded to be very deep, with only a few inches side amidships, and yet we believe they are as seaworthy as any ships that go to sea, drawing so little water they are always so lively, they are always on the top of the seas, and go over them, and not through them, as is the case with ships sharper or finer lined and deeper built, therefore drawing more water.

We shall be glad to furnish any further information that you may require.

I am, &c.

To the Assistant Secretary, (signed) *Chas. L. Limpricht.*
Marine Department, Board of Trade.

— No. 65. —

(M. 3107.)

Board of Trade to Messrs. *Johnson, Limpricht & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
Gentlemen, 10 March 1875.

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 25th ultimo with reference to the loading of your vessel, the "*Serantes*," on her recent voyage from Barrow to Rotterdam, and in reply to state that, looking to your statement as to the peculiar build of the vessel, they will be glad to receive, at your early convenience, a tracing showing her construction.

I am, &c.

Messrs. Johnson, Limpricht & Co., (signed) *H. G Calcraft.*
Newcastle-on-Tyne.

— No. 66. —

(M. 3942.)

Messrs. *Johnson, Limpricht & Co.* to Board of Trade.

Sir, Newcastle-upon-Tyne, 11 March 1875.

WE have to acknowledge receipt of your letter of yesterday, and in accordance with your desire, we now enclose you, for your perusal and return, the midship section and longitudinal deck plan of our steamship "*Serantes*," in order that you may exactly see the build of the steamer.

We rely on your returning the tracings when done with, as those are the only set we have.

We remain, &c.

To the Assistant Secretary, (signed) *Johnson Limpricht & Co.*
Marine Department, Board of Trade.

— No. 67. —

(M. 3942.)

Board of Trade to Messrs. *Johnson, Limpricht & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
23 March 1875.

Gentlemen,

I AM directed by the Board of Trade to return herein the tracings which accompanied your letter of the 11th instant, and to inform you that they are advised that the steamship "*Serantes*" was too deep at the draught and freeboard, reported to them when the vessel left Barrow on the 22nd January.

I am to add that if the vessel loads as deeply again she will probably be detained as unseaworthy.

I am, &c.
(signed) *Thomas Gray.*

Messrs. Johnson, Limpricht & Co.,
Steamship Owners, Newcastle-on-Tyne.

— No. 68. —

(M. 1926.)

Mr. *W. Nawton Smith* to Board of Trade.

Hull, 4 February 1875.

Sir,

YOUR Despatch* dated 27th ultimo, and marked M., has been duly received.

Before replying to the above I have referred to Captain Scarr, and he makes the freeboard slightly different from your figure. He reports she was not overloaded, as is proved by her making the passage from the Tyne to the Thames in 32 hours in the teeth of a strong gale all the way, the steamer behaving well throughout.

Your surveyor at the Tyne was on board before leaving, and approved of her loading.

You will of course easily understand that when running along the coast, the "*Alfgar*" is loaded deeper than when going further away.

The captain has full authority in the loading, and is cautioned not to overload, and I have no doubt whatever that when she left the Tyne on the voyage you name, she was well and properly loaded in every respect.

I am, &c.
(signed) *W. Nawton Smith.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 69. —

(M. 1926.)

Board of Trade to Mr. *W. Nawton Smith.*

Draught of Water.

Board of Trade, Whitehall Gardens,
17 February 1875.

Sir,

WITH reference to your letter of the 4th instant, relative to the loading and voyage of the steamship "*Alfgar*," and stating that the surveyor who measured the clear side of the vessel on the 22nd ultimo approved of her loading, I am directed by the Board of Trade to state that it appears that the surveyor in question merely stated that the vessel was trimmed in a better manner than she was

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* This refers to the ordinary Circular. *See* Appendix (B.).

was on a former occasion, and that he did not in any way express his approval of the manner in which the vessel was loaded.

I am to add, that the surveyors to this Board have no authority to express any opinion as to whether a vessel is overloaded or not.

I am, &c.

W. Nawton Smith, Esq., (signed) *Thomas Gray.*
Shipowner, Hull.

— No. 70. —

(M. 1711.)

Messrs. *Milburn Brothers* to Board of Trade.

Royal Insurance Buildings,
Sir, Newcastle-on-Tyne, 1 February 1875.

We have simply to contradict the report contained in your communication of 30th ultimo.*

The "*Redesdale*" was not deeply and improperly laden.

Yours, &c.

The Assistant Secretary, (signed) *Milburn Brothers.*
Marine Department, Board of Trade.

— No. 71. —

(M. 1924.)

Mr. *Adolphus P. Harrison* to Board of Trade.

Sir, Newcastle-upon-Tyne, 4 February 1875.

In reply to your letter* of 2nd instant, addressed to Mr. T. P. Hearne, I have the pleasure to say that the steamship "*Holmside*" performed the voyage your said letter refers to safely, and in her usual time.

In the absence of the captain I cannot say what "side" she had on 27th ultimo; and as regards the query as to her usual lading, I beg to refer you to my last of 4th January, repeating that not a more seaworthy steamer crosses Shields Bar.

Yours, &c.

The Assistant Secretary, (signed) *Adolphus P. Harrison,*
Marine Department, Board of Trade. Managing Owner.

To save time, will you for the future address me direct, instead of Mr. Hearne.

"*Holmside*" has made 130 consecutive voyages to London and back in all weathers, without losing a rope yarn.

— No. 72. —

(M. 1854.)

Mr. *Charles Harris* to Board of Trade.

Dear Sir, Newcastle, 3 February 1875.

Your favour of yesterday* is to hand. Will you be good enough to state where and when the measurements given were taken. The "*Wastdale*" was described to me by a gentleman who saw her moored in Shields Harbour, just before proceeding to sea, as flying light.

He was on board the steamer "*Hydra*," which vessel lay alongside the "*Wastdale*," having 42 inches side, and her rail was on a level with "*Wastdale's*" waterways.

I did not see her myself after loading, but from trustworthy information I can assert that she had no list whatever. She had less dead weight on board than she usually loads.

I am, &c.

The Assistant Secretary, (Signed) *Chas. Harris.*
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 73. —

(M. 1854.)

Board of Trade to Mr. *C. Harris.*

Draught of Water.

Board of Trade, Whitehall Gardens,
25 February 1875.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 3rd instant, relative to the loading of the steamship "*Wastdale*," and asking for information as to when and where the measurements referred to were taken, and in reply to inform you that the vessel's free board was measured by one of this Board's surveyors in the Tyne Dock, North Shields, on the 27th ultimo.

I am to add that the Board of Trade would be glad to learn how the vessel has made her voyage.

I am, &c.
(signed) *Thomas Gray.*

Charles Harris, Esq.,
Steamship Owner, Newcastle.

— No. 74. —

(M. 3109.)

Mr. *C. Harris* to Board of Trade.

Newcastle, 26 February 1875.

Sir,

YOUR favour of yesterday (M. 1854) is duly to hand. I am glad to observe that the free board was measured by your surveyor in Tyne Dock on the 27th, and not, as it should have been, when she was lying, prepared to go to sea, at Smith's buoys, North Shields, on the afternoon of the 28th. I have not yet been able to communicate with Captain Linklater, so cannot yet give you the correct amount of free board the "*Wastdale*" had when proceeding to sea, but am happy to inform you that she arrived at Algiers early Sunday morning, the 7th instant, after a remarkably quick and prosperous voyage of nine days and a few hours.

I am, &c.
(signed) *Charles Harris.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 75. —

(M. 2926.)

Messrs. *Hine Brothers* to Board of Trade.

"*Florence Richards*" Steamship.

Custom House Buildings, Maryport,
23 February 1875.

Si

YOUR letter* of the 3rd instant, addressed to Sloane Richards, Esq., has been forwarded to us.

In reply, we beg to say that the vessel on the occasion referred to had a "list," but before she left the port she was in good and proper trim.

We may observe that she made the quickest run to Rotterdam from Barrow on the occasion your letter refers to that she had ever done.

Yours, &c.
(signed) *Hine Brothers.*

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 76. —

(M. 2341.)

Mr. *D. Gillespie* to Board of Trade.

Sir, Dublin, 9 February 1875.

Your letter* to Mr. McChrystal, owner of the steamship "*Foyle*," has been forwarded to me for explanation. I beg to inform you that I did not consider the steamship "*Foyle*" too deeply laden on the voyage from Barrow to Swansea; I was not aware that she had only one foot six inches of clear side; I was present when the Surveyor to the Board of Trade measured her; he asked me where I was bound to with the boat, I told him Swansea; he told me that the passage was short, and that he did not consider her too deeply laden. I beg to inform you that the steamship "*Foyle*" made the passage quite safe from Barrow to Swansea.

I cannot understand how the Surveyor to the Board of Trade at Barrow has made the report, after telling me he did not consider the boat too deeply laden; I will be glad to give any further information I can on this subject.

Yours, &c.

The Assistant Secretary, (signed) *Daniel Gillespie.*
Marine Department, Board of Trade.

— No. 77. —

(M. 2415.)

Mr. *W. Poller* to Board of Trade.

Sir, Guernsey, 12 February 1875.

In reply to yours of 3rd instant,* I beg to inform you the "*Agenora*" safely arrived at St. Malo on the 8th instant, having had a splendid passage.

I beg to inform you she does not usually load as deep as when she left Shields; she was then loaded with gas coals, and being a heavy coal she was loaded deeper than if she was loaded with steam or house coal.

She is A 1 at Lloyd's, and has a very bold bow and stern when loaded.

I am, &c.

Thomas Gray, Esq., (signed) *W. Poller.*
Assistant Secretary, Marine Department.

— No. 78. —

(M. 2497.)

Mr. *D. Bannerman* to Board of Trade.

30, Chapel-walks, Liverpool,
Sir, 15 February 1875.

Your report of the 12th instant referring to the steamship "*Murton*" to hand. I know that she left Swansea on the 30th ultimo for Rouen, but did not know that she was too deeply laden; she went and returned as usual, but I will write and ask, and will let you know the result.

Yours, &c.

The Assistant Secretary, (signed) *D. Bannerman.*
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 79. —

(M. 3131.)

Mr. *D. Bannerman* to Board of Trade.

30, Chapel-walks, Liverpool,
24 February 1875.

Sir,

In accordance with the promise I made when I answered your last respecting the steamship "*Murton*" when she sailed from Swansea for Rouen on the 30th ultimo, I have now received an account of the freight and the quantity of cargo delivered on that voyage, viz., 485,865 kilogrammes or 478 tons English; therefore there must be something wrong in the report sent to you.

Yours, &c.
(signed) *D. Bannerman.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 80. —

(M. 3131.)

Board of Trade to Mr. *D. Bannerman.*

Draught of Water.

Board of Trade, Whitehall Gardens,
9 March 1875.

Sir,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 24th ultimo with reference to the clear side of the steamship "*Murton*" on sailing from Swansea on the 30th January last, and in reply, to state that, having referred the matter to their surveyor, they see no reason to question the accuracy of his measurements.

I am, &c.
(signed) *Thomas Gray.*

D. Bannerman, Esq.,
30, Chapel-walks, Liverpool.

— No. 81. —

(M. 2690.)

Messrs. *John Fenwick & Son* to Board of Trade.

44, Coal Exchange, London,
18 February 1875.

Sir,

We have to acknowledge receipt of your letter* of the 12th instant to Mr. James Jones of Newcastle-on-Tyne, acquainting us that the Board of Trade has been informed that the steamship "*Fenella*" of London, sailed from the port of North Shields with coals for London, having a clear side of 2 feet 10 inches, and that the Board of Trade are advised that with the clear side above indicated the vessel was deeply laden, and will be glad to be informed how she makes the voyage in question and whether she is usually so deeply laden as is reported.

In reply we beg to state that the master of the steamship "*Fenella*" does not admit the correctness of the information furnished to the Board of Trade, and especially that his vessel was improperly or deeply laden.

That the steamship "*Fenella*" made her voyage as usual and safely arrived at her destination.

That the masters of our steamers have instructions to never improperly or deeply load their steamers, and we have no reason to suppose they ever do so.

We are, &c.
(signed) *John Fenwick & Son.*

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 82. —

(M. 3057.)

Messrs. *H. Ellis & Son* to Board of Trade.

17, Gracechurch-street, London,
23 February 1875.

Sir,

In reply to your letter* of the 18th instant to our Mr. C. F. Ellis, we beg to say that we forwarded your letter to Captain Osborne, who reports that the "*Marion*" on leaving the port of Glasgow on the 9th instant, was at her loading marks as previously sanctioned by the Board of Trade surveyor at Cardiff.

This steamer is loaded to 15·6 forward and 17·6 aft., and that she has always behaved admirably well in rough weather.

We fear that the surveyor from whom you may have received the report has hardly considered the question of mean draught, otherwise he would have made allowance for the vessel's spring and length of poop.

We fear that your surveyor has hardly given the subject his usual consideration, and has not reported upon the matter as a question of mean draught. The "*Marion*" has a high full poop, extending to and connected with the engine-room; in fact the space so covered extends to the fore part of the engine boiler spaces, or to put it more clearly, for about 120 feet of her entire length; she also has a long topgallant forecastle which gives her a high bow and a short waist.

We may mention that the vessel is reported by her officers to be a splendid heavy weather boat, and she has never yet involved a claim on the underwriters for damage done by sea. She has been a great deal in the employ of the Government, and was used during the Ashantee War as the chief transport officer's flag ship, and afterwards for the conveyance of Government stores and passengers between Malta and Woolwich, and was always loaded to the same marks.

We are, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *Henry Ellis & Son.*

— No. 83. —

(M. 3666.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W., 8 March 1875.

Sir,

A REFERENCE to the "Record of Draught of Water" of the 27th ultimo shows that the steamship "*Prado*" sailed from Cardiff, a port not strange to overloading, on the 26th February, "very deep," on a dangerous voyage, and that on the same day the "*Flor del Mar*" left Liverpool, under similar conditions as to loading, though on a less hazardous voyage. In the "Record" of the 1st instant, I observe that the following vessels sailed from North Shields—another offending port—on the 26th February, deeply laden:—the "*Hugh Taylor*," the "*Garrison*," the "*Nentwater*," the "*Charlaw*," the "*Westhoe*," and the "*Emerald*." These were all colliers, and two of them had to encounter, at a tempestuous season of the year, the dangers of the Bay of Biscay. The same "Record" points to the fact that on the 27th ultimo, three vessels, the "*Huntcliffe*," the "*Genoa*," and the "*Glencairn*," sailed from Middlesbro', with cargoes of iron, and very deeply laden. Finally, the "Record" of the 2nd instant shows that the "*Holmside*," which seems to be habitually overladen, and the "*Agnes and Louisa*," left North Shields, "deep."

I am, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *Samuel Plimsoll*,
per *Chas. P. Robert.*

(For Board of Trade reply, *see* Appendix A.)

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* This refers to the ordinary Circular. *See* Appendix (B.)

— No. 84. —

(M. 3964.)

Messrs. *Strong, Reid & Page* to Board of Trade.

Sir, Liverpool, 11 March 1875.

In reply to your letter* of yesterday, just received, the steamship "*Prado*" arrived at Gibraltar on the morning of the 4th instant, making the run from port to port in four days and sixteen hours.

The following is a copy of the Captain's telegram:—

From *Thomas* to *Strong, Reid & Page*, Liverpool.

Gibraltar, 4th—11 a.m.

"*Prado*" arrived, Gibraltar, three, Thursday morning. Four days sixteen hours, all well; commenced discharging at nine.

This rapid passage must be pretty good proof that the ship was neither deep nor out of trim. When we have men in command of our ships of much experience and first-class characters, we must leave the loading of their respective ships entirely to their own discretion, for if we were to begin to interfere and worry such men they would quickly leave our employ in disgust.

We are, &c.
(signed) *Strong, Reid & Page.*

Thomas Gray, Esq., Board of Trade.

— No. 85. —

(M. 4434.)

Messrs. *McGowan & Lane* to Board of Trade.

"*Flor del Mar.*"

Dear Sir, Londonderry, 20 March 1875.

This vessel made the voyage from Liverpool to this port in 36 hours; being a broad flat vessel, she loads more deeply than ordinary vessels, and makes good passages; the reports we get are very favourable to her being a comfortable dry vessel to sail in; on the occasion referred to she was rather more deeply laden than usual.

Yours, &c.
(signed) *McGowan & Lane.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 86. —

(M. 3980.)

Mr. *W. Laing* to Board of Trade.

24, Constitution-street, Leith,
12 March 1875.

Sir,

I am in receipt of your communication, dated 11th* instant and marked as above, with reference to the steamship "*Garrison*," sailing from Shields.

I have sent the communication to Messrs. Davidson & Charlton, Newcastle on-Tyne, who are the ship's husbands.

Having still a share in this steamer, and knowing her well, I may remark again what I have so often said to you before, that the clear side you mention is a good one, considering that the ship is loaded three or four feet by the stern to allow for consumption of coals (her engines being aft), and that your reporters measure

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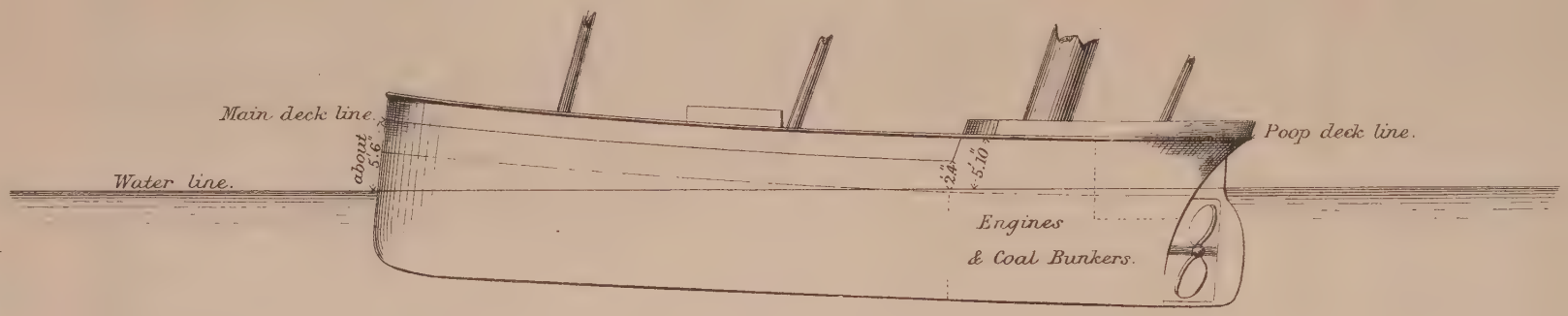
* This refers to the ordinary Circular. *See* Appendix (B.).

(Enclosure in No. 87.)



measure from the main deck at its *lowest* point. Her bows were high out of the water, and she has a quarter deck 3½ feet high *abaft* the place where measured, both of which facts are ignored.

I would again ask you to observe that to load the ship on an even keel, and thus please the Board of Trade Officials by leaving a high clear side aft, would endanger her safety, and that of all the lives on board, by the consumption of fuel from aft, causing her to go down by the head.

I am informed that the "*Garrison*" arrived safely at Hamburg, making a better run than many other steamers, in the midst of very heavy weather.

I am, &c.

The Assistant Secretary, (signed) *W. Laing.*
Marine Department, Board of Trade.

— No. 87 —

(M. 4069.)

Mr. *D. Charlton* to Board of Trade.

7, Quayside, Newcastle-on-Tyne,
13 March 1875.

Sir,

YOUR communication, dated 11th instant, and bearing the above mark, respecting the steamship "*Garrison*," of Newcastle (we do not know of any boat of this name hailing for Leith), has been handed to us by Mr. William Laing, the late manager. Mr. Laing at the same time informs us of the contents of his reply, which we beg to confirm, and presume such is sufficient answer on the subject. We may, however, remark that the boat was somewhat short of her usual cargo, and we consider, taking into consideration her construction, that had she been going a longer voyage than to Hamburg, that she should have been even more trimmed by the stern than she was. This you will be aware could have been done with the same amount of cargo in her (or even less), and thus her clear side at the break of the poop would have been less, and we suppose the reporters would have made no mention of corresponding boldness which this would have given forward had she been thus loaded for a long voyage.

We like to send our boats away in proper condition, and generally leave the trim to our captains, who know what suits them best, and what they can do. The "*Garrison*," properly loaded, is a fine sea boat, and the captain who is in her would not leave her, he has such confidence in her, though we have offered him a much larger vessel. During the late gale, before she left, the captain was speaking about her trim, and saying what heavy weather many of the boats leaving were making of it, and remarked of his own boat, "I could take her over the bar without shipping a sea," which will show you that she was perfectly safe.

We are quite aware that a boat trimmed on an even keel (with engines amidships) would be too deep with only 2 feet 4 inches side, but this is quite a different case, and we really wish your surveyors would learn to discriminate.

We enclose a rough sketch, showing what the effect would be of even trimming the "*Garrison*" on so level a keel as she had for Hamburg, if she was going on a long trip.

We are, &c.

The Assistant Secretary, (signed) *Davidson & Charlton.*
Marine Department, Board of Trade.

Enclosure in No. 87.

(*See* Drawing opposite.)

THE boat lightened abaft 3″ per day *aft* through consumption of coals; thus supposing her to leave the Tyne for Malta, a voyage of 13 days, the clear side (if she left in the above trim) at the break of the poop on arrival at Malta would, at this rate, without allowing for centre of gravity, be 5·7″, and (the centre of gravity being amidships) she would

would be considerably by the head, and quite unfit to encounter any heavy weather. It is, therefore, necessary to trim her well down aft, which can be done with same quantity of cargo, though it makes the side at break of the poop less, which is what is complained of, though in reality it is just what is necessary for the safety of the boat.

— No. 88. —

(M. 4059.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
13 March 1875.

Sir,

FROM the "Record of Draught of Water" of the 9th instant, I gather that there is some inaccuracy with respect to the "*State of Georgia*," reported to have sailed from Glasgow on the 6th, and from Belfast on the 7th instant. You will observe that the clear side in the two reports varies considerably, as does likewise the depth of hold. The "Record" of the same date shows two cases of overloading, both from Glasgow, that of the "*Marquis of Lorne*," which sailed for Civita Vecchia, on the 9th, very deep, and that of the "*Fitzclarence*" which left on the same day for Gibraltar, "deep." Finally, in the "Record" of the 11th instant, I find that three vessels sailed very deeply laden, viz., the "*Corcyra*" from Barrow, the "*Cognac*" from Glasgow, and the "*Lady Derby*" from Middlesbro'. These vessels left the respective ports on the 10th instant.

I remain, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *Samuel Plimsoll*,
per *Chas. P. Robert*.

— No. 89. —

(M. 4059.)

Board of Trade to Mr. *S. Plimsoll*, M.P.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
31 March 1875.

Sir,

WITH reference to your letter of the 13th instant, drawing attention to certain cases of alleged overloading, I am directed by the Board of Trade to inform you that before your letter was received, the cases alluded to by you had been brought before the notice of their professional officers, and, where necessary, acted on by the Board.

With reference to the clear side of the "*State of Georgia*" mentioned by you, I am to inform you that that vessel took in some more cargo in the after-hold before she left Belfast, which would account for the alteration in her draught and freeboard. The apparent discrepancy in the depth of hold was caused by the measurements at the respective ports of Glasgow and Belfast being taken to different decks.

I am, &c.

S. Plimsoll, Esq., M.P.,
4, Victoria-street, S.W.

(signed) *R. G. C. Hamilton*.

— No. 90. —

(M. 4303.)

Messrs. *Palgrave & Co.* to Board of Trade.

Dublin, 17 March 1875.

Sir,

WE have to acknowledge receipt of your letter* of 15th instant, respecting the steamship "*Marquis of Lorne*," and addressed to our Mr. Charles Palgrave.

In

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* This refers to the ordinary Circular. *See* Appendix (B.).

In reply, we beg to state that the "*Marquis of Lorne*" was loaded with gas coals, and such being bulky, she would not have her full dead weight on board. We have no means of ascertaining if the measurement is correct until we hear from captain, but we would observe the measurement was taken in fresh water, and that when she would get down the Clyde into salt water there would be an increase in the clear side of 4 to 5 inches.

We shall be happy to furnish any further information required by the Board of Trade.

Yours, &c.
(signed) *W. B. Palgrave & Co.*

Thomas Gray, Esq.,
Marine Department, Board of Trade.

— No. 91. —

(M. 4812.)

Messrs. *Palgrave & Co.* to Board of Trade.

Sir, Dublin, 25 March 1875.

REFERRING to ours of 17th instant, with reference to the "*Marquis Lorne*," we beg to say we have a telegraph from Civita Vecchia, announcing her safe arrival at that port last night.

I am, &c.
(signed) *W. B. Palgrave & Co.*

Thomas Gray, Marine Secretary,
Board of Trade.

— No. 92. —

(M. 4880.)

Messrs. *Palgrave & Co.* to Board of Trade.

Sir, Dublin, 30 March 1875.

AT foot we hand you extract of letter from Captain Hall, of the steamer "*Marquis of Lorne*," dated Civita Vecchia, 25th instant.

We are, &c.
(signed) *W. B. Palgrave & Co.*

Thomas Gray, Esq., Marine Department,
Board of Trade.

Enclosuse in No. 92.

(Extract.)

"YOUR letter of instructions to hand this morning, on my arrival here. After a rather long passage, we have had strong head winds since passing Gibraltar, which we did on the 18th instant, at 10 a.m. In reference to "*Marquis's*" draught of water, her side was measured from top of deck plank at side. Nothing allowed for curve of the deck, which is about 8½ or 9 inches. This the surveyor said was only allowed for when the curve was above 9 or 10 inches; the difference in draught in salt water would be 4 to 6 inches. In regard to her behaviour at sea this passage, she never behaved better, and we have had some very heavy beam seas at the commencement and latter part of voyage. She is now drawing 15 feet 4 inches on an even keel. I had after tank full, but have pumped it out to get in to inner harbour."

— No. 93. —

(M. 4993.)

Messrs. *Palgrave & Co.* to Board of Trade.

Steamship "*Marquis of Lorne.*"

Sir, Dublin, 1 April 1875.

REFERRING to ours of the 30th ultimo, we now beg to hand you extract of a second letter received from Captain Hall, master of this steamer, dated Civita Vecchia, 27th March 1875.

Yours, &c.

Thomas Gray, Esq., (signed) *W. B. Palgrave & Co.*
Marine Secretary, Board of Trade.

Enclosure in No. 93.

EXTRACT of Captain *Hall's* Letter, 27 March 1875.

"I AM in receipt of a telegram this day from Vanetti, Genoa, saying that they were waiting a reply from you regarding homeward charter; I wrote you on arrival, which I trust you have got; I was rather surprised to see (after writing to you) in the papers received here, that the draught of "*Marquis*" had caused such special remark after leaving Glasgow, for when I left *I was in unusual good trim*, for the gas coal was very *light and bulky*, and *filled us up*. The "*Marquis*" has a *great sheer*, and all such built vessels do naturally load deep, and *have less freeboard* in midships than a *straight built* ship, but then we were *high out* of *the water, forward* and *aft*, which I consider *better than having* a *nearly uniform free board, fore and aft*, which a straight lined ship would naturally have, but I hope that the Board of Trade *surveyors will soon come to a conclusion of the load draughts of different vessels*, so that masters may *know how to load*, and not to wait *until the ship is loaded, and then stop her*. I mentioned in my former letter of our ship's behaviour this passage out, and will send home abstract of logs."

— No. 94. —

(M. 4487.)

Messrs. *Burrell & Son* to Board of Trade.

Sir, Glasgow, 22 March 1875.

WE are in receipt of your communication* of 15th instant (addressed to Mr. Robert Donaldson) with reference to the draught of water of screw steamer, "*Fitzclarence,*" on leaving Glasgow on 9th instant.

In reply, we beg to say the said steamer is usually laden to the same draught as you name; but we do not for a moment consider her overloaded with a free board of 2 feet 4½ inches, and we have no hesitation in saying she would be perfectly seaworthy with from 50 to 70 tons more cargo on board.

We arrive at this conclusion from the fact that she is constructed with an exceptionally full poop and forecastle, which give greater buoyancy to the vessel generally than many others of the same class and build. Permit us further to state it is altogether erroneous on the part of your Board to decide whether a vessel is, or is not overloaded, if such decision is based on the vessel's draught of water only, without giving allowance for the particular advantages in construction some vessels possess over others.

We have also to state that we allow our commanders to be the judge of what cargo their vessels are capable of carrying, as was the case in this instance.

The "*Fitzclarence*" arrived at Gibraltar early on Wednesday morning all well, after a good passage of seven days.

We are, &c.
(signed) *Burrell & Son.*

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 95. —

(M. 4272.)

Messrs. *Palgrave & Co.* to Board of Trade.

Sir, Dublin, 17 March 1875.

YOUR letter* of 15th instant, addressed to our Mr. Michael Murphy, is to hand, and in reply we beg to say that the "*Corcyra*" arrived at Rotterdam on Wednesday morning, 15th instant; we are not aware that she had more than her ordinary cargo on board; we shall be happy to furnish any further information the Board of Trade may require.

We are, &c.

Thomas Gray, Esq., (signed) *W. B. Palgrave & Co.*
Marine Department, Board of Trade.

— No. 96. —

(M. 4072.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
Sir, 13 March 1875.

I BEG to draw your attention to some further cases of overloading. Thus, on the 2nd instant the "*Bebside*" sailed from North Shields for Havre, "dangerously deep"; on the 4th instant the "*Amazon*" left East Hartlepool for London, "deep," and with a bad list. On the same day the "*Bessemer*" sailed from Middlesbro' for Dunkirk, "very deep," (*see* "Record" of the 5th instant), and the "*George Elliott*" left North Shields for London, "deep"; on the 3rd instant the "*Stag*" left the same port for Genoa, "very deep," and with a bad list, and the "*Esk*" for Hamburg, "very deep." Passing on to the "Record" of the 6th instant, I find that the "*Leverington*" sailed from Cardiff for Syra on the previous day, "deep," and with a list. The "Record" of the 8th instant shows that the "*Arthur*" was very deeply laden (with a list) when it sailed from Glasgow with coals for Bombay on the 6th; that the "*Charlaw*" was "very deep" when she left North Shields on the same day for London; that the "*Dania*," when she sailed from that port at the same time for Malta, had a very bad list, and was "very deep," and this whilst having to encounter the dangers of the Bay of Biscay. Finally, I perceive that the "*Barita*" left North Shields for Venice on the 6th instant, "deep."

I have, &c.

The Assistant Secretary, (signed) *Samuel Plimsoll*,
Marine Department, Board of Trade. per *Chas. P. Robert.*

(For Board of Trade reply, *see* Appendix A.).

— No. 97. —

(M. 4120.)

Messrs. *Glover Brothers* to Board of Trade.

Sir, London, 15 March 1875.

YOUR letter* of 12th instant is to hand and contents noted. The "*Amazon*" steamship made her passage from Hartlepool to London without any difficulty.

I cannot explain the "list," but have no doubt it arose from a little water in one of the ballast tanks, which would be pumped out as soon as the vessel got under way.

She is not usually laden with a list.

Yours, &c.

The Assistant Secretary, (signed) *Glover Brothers.*
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 98. —

(M. 4443.)

Mr. *F. Herskind* to Board of Trade.

Sir, West Hartlepool, 20 March 1875.

On my return home from the South I find your favour* of 12th instant, in reply to which I beg to say that I have no information confirming the reported improper loading of the steamship "*Dania*" when sailing for Malta on the 6th instant.

I cannot account for the same nor for the reported list, but supposing she had a clear side of 3 feet 1 inch starboard and 1 foot 2 inch port, it would give, when put in proper trim, a mean of 2 feet 1½ inch, which would make her quite seaworthy.

She had her usual weight of cargo on board and has always performed her voyages with safety and regularity, and on hearing from the master after arrival at Malta I shall report further.

I am, &c.
(signed) *F. Herskind.*

Thomas Gray, Esq.,
Marine Department, Board of Trade.

— No. 99. —

(M. 6242.)

Mr. *F. Herskind* to Board of Trade.

Sir, West Hartlepool, 22 April 1875.

Referring to my letter of 20th ultimo, I now beg to hand you letter from the captain of the steamship "*Dania.*"

I am, &c.
(signed) *F. Herskind.*

Thomas Gray, Esq.,
Board of Trade

Enclosure in No. 99.

Steamship "*Dania,*" West Hartlepool,
22 April 1875.

Dear Sir,

In answer to the communication from the Board of Trade, dated 12th March, I beg to state that the surveyor came on board at Shields on the 6th of March, 11 a.m., and measured our side. At that time the ship had the list reported, but on account of its being night when we finished loading, the ship was not properly trimmed.

I told the surveyor that the ship would not sail that day; also, that if he would call again in the course of an hour I would have the cargo trimmed properly and the ship put on an even keel.

I accordingly at once put the crew on to trim the cargo, which gave us a clear side of 2 feet 2 inches.

The surveyor did not call again, and I sailed next day, Sunday, the 7th instant, and arrived at Malta the 20th of March, making the passage in the usual time.

I remain, &c.
(signed) *Wm. Phippen.*

F. Herskind, Esq.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 100. —

(M. 3721.)

Messrs. *Cory, Lohden & Co.* to Board of Trade.

West Hartlepool, 8 March 1875.

Sir,

We are in receipt of your letter* of 6th instant. The captain of the "*Stag*" wrote us a letter, which we received the day after his sailing, which informed us that he trimmed her upright before leaving, and she would therefore have clear sides of 2 ft. 4 in.

We are, &c.

Thomas Gray, Esq. (signed) *Cory, Lohden & Co.*

— No. 101. —

(M. 4548.)

Messrs. *Cory, Lohden & Co.* to Board of Trade.

"*Stag.*"*

West Hartlepool, 22 March 1875.

Sir,

We have received a telegram to-day announcing the arrival of this steamer at Genoa.

* * * * * * *

We are, &c.

(signed) *Cory, Lohden & Co.*

— No. 102. —

(M. 4213.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
15 March 1875.

Sir,

In the "Record of Draught of Water," of the 12th instant, just received, I notice that the "*Caledonia*" having a depth of hold of 21 feet 5-10ths, sailed from Liverpool on the 11th instant for Bombay, with a clear side of only 2 feet 1 inch. There can be little doubt, however, that in this instance there must have been some compensating element above the deck-plank. On the 10th instant I observe that the "*Agnes and Louisa*" sailed from North Shields for Portsmouth, "very deep." You will perhaps remember that I called your attention to the fact that this vessel left the same port on the 27th ultimo, "deep." I further note that on the 11th instant the "*John O. Scott*" sailed from North Shields, "deep." In another letter I hope to be able to supply the missing links in respect to the "Record," mentioned in my letter of the 6th instant.

I remain, &c.

The Assistant Secretary, (signed) *Samuel Plimsoll*, M.P.,
Marine Department, Board of Trade. per *Chas. P. Robert.*

(For Board of Trade reply, *see* Appendix A.)

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 103. —

(M. 4249.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
17 March 1875.

Sir,

As the "Records of Draught of Water" that were missing, and which have since been found, show so many cases of overloading, I have thought it best to put the matter in a tabular form, as follows:

Date of "Record."	Date of Sailing.	Port of Departure.	Name of Vessel.	Remarks.
4 Jan. 1875	2 Jan. 1875	Ardrossan -	Ardeer - -	"Deep."
4 Jan.	1 Jan. „	Hull - -	Aberdeenshire -	Four feet 8 inches by the stern.
4 Jan. „	2 Jan. „	Liverpool -	Ellen Owen -	"Deep."
4 Jan. „	2 Jan. „	Liverpool -	Harriet Amelia -	"Deep."
4 Jan. „	2 Jan. „	Swansea -	Gertrude - -	"Deep."
4 Jan. „	4 Jan. „	Liverpool -	Christina - -	"Deep."
5 Jan. „	4 Jan. „	Middlesbro' -	Huntcliffe -	"Dangerously deep;" iron cargo—an old offender.
6 Jan. „	5 Jan. „	Liverpool -	Annie - -	"Deep," with a list.
6 Jan. „	5 Jan. „	North Shields	Charlotte - -	Sailed with a bad list.
4 Feb. „	3 Feb. „	North Shields	Elaine - -	"Deep."
4 Feb. „	2 Feb. „	Leith - -	Lady Derby -	"Deep."
4 Feb. „	2 Feb. „	Glasgow -	Llewellyn -	"Very deep;" deep by stern.
4 Feb. „	2 Feb. „	Cardiff - -	Corisande -	"Deep;" coal-laden for Cadiz.
5 Feb. „	3 Feb. „	Cardiff - -	Troubadour -	"Deep."
5 Feb. „	3 Feb. „	Glasgow -	Arno - -	"Deep," with a bad list; bound for Alexandria.
5 Feb. „	3 Feb. „	Hull - -	Glance - -	"Deep."
5 Feb. „	4 Feb. „	North Shields	Longhurst -	"Deep," with a list.
5 Feb. „	4 Feb. „	Swansea -	McCleod - -	"Very deep;" bound for Spanish ports.
5 Feb. „	4 Feb. „	Swansea -	Sea Gull - -	"Very deep;" list; bound for Spanish ports.
6 Feb. „	5 Feb. „	Hull - -	Orange Girl -	"Deep."

The foregoing list completes the catalogue of over-laden ships, as shown, so far, in the "Records" of the current year.

I have, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *Samuel Plimsoll*,
per *Chas. P. Robert.*

(For Board of Trade reply, *see* Appendix A.).

— No. 104. —

(M. 3446.)

Mr. *John Watson* to Board of Trade.

Sir,

St. Andrew's, N.B., 8 February 1875.

Both of yours* of the 12th ultimo, regarding the schooner "*Christina*," duly received.

In reply to the one in which you say the vessel was deeply laden, or "reported to be so," I beg to refer you to the enclosed dimensions over the signature of the registrar of shipping of this port, by which you will at once see the "*Christina*" is a very broad flat vessel, after the style of the American coaster, which class of vessels are intended to load "decks to." She crossed from here to Liverpool in 21 days in the month of November last, out of which there were six or seven days of heavy easterly winds.

One

* This refers to the ordinary Circular. *See* Appendix (B.).

One of the men wrote the vessel was so dry that if he had worn slippers all the way he would not have got his feet wet. The captain wrote that he passed nine ships and ran them out of sight in six hours, so you will see the vessel could not have been at all overloaded, although she was only 3½ wales out having at that the light deck load, three feet. The cargo was spruce deals. The vessel is ceiled with 7-inch plank throughout, some 3 inches thicker than usual I think. If you find fault for deep loading in this case you should find fault for allowing the vessel to sail from here with only 3½ wales out, although we only took the deck load required by law. The vessel's only showing such a small side with such a cargo will at once show you the description of vessel she is.

The numbers were on the stern-post the whole length when the schooner left here. I will forward your papers to the captain. I cannot account for what you say respecting numbers, unless when the vessel was coppered in Liverpool they may have got knocked off.

I shall direct the captain to comply with requirements to the letter if he has not already done so; when I get his reply I shall send you what he says.

Vessel is new; launched last autumn.

John Watson, Managing Owner,
by *John Campbell*

Enclosure in No. 104.

Custom House, St. Andrew's, N.B.,
11 February 1875.

DIMENSIONS of the schooner "*Christina*."
Length, 137 feet 5 inches; breadth, 32 feet; depth, 12 feet 5 inches; tonnage, $365\frac{69}{94}$.

W. Whillock, pro Registrar.

— No. 105. —

(M. 2438.)

Mr. *W. Hinde* to Board of Trade.

15, Queen's Quay, Belfast,
12 February 1875.

Gentlemen,

YOURS of 10th instant* was handed to me by the Secretary of the late owners of "*Llewellen*" steamship, in which you state she had only a freeboard of 12½ inches. I also had a communication from your Board for her former trips, when you state she had only 12 inches. On that occasion I made full inquiry of captain, and reported thereon to your Board, dated 4th February, and to which I refer you.

Indeed, from the build of the vessel, I consider she would be perfectly safe and seaworthy if she was laden down to 6 inches in the waist, instead of 12½ inches. However, I have no intention of loading her so deep, and consider it is my interest to keep her perfectly seaworthy.

I am, &c.
(signed) *W. Hinde*,
Owner of Steamship "*Llewellen*."

The Board of Trade.

— No. 106. —

(M. 2438.)

Board of Trade to Mr. *W. Hinde*.

Draught of Water.

Board of Trade, Whitehall Gardens,
23 February 1875.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 12th instant, relative to the loading of the steamship "*Llewellen*," when

* This refers to the ordinary Circular. *See* Appendix (B.).

when sailing from Glasgow on the 2nd instant, and in reply to state that they will be glad to learn how the vessel has made her voyage.

I am, &c.

William Hinde, Esq.,
15, Queen's Quay, Belfast.

(signed) *Thomas Gray.*

— No. 107. —

(M.3120.)

Mr. *W. Hinde* to Board of Trade,

15, Queen's Quay, Belfast,
25 February 1875.

Gentlemen,

Yours of 23rd to hand. I find I omitted to state, in my letter to your Honourable Board of the 12th instant, that the steamship "*Llewellen*" made an excellent passage to Belfast. Indeed I may add I give the captain no instructions how deep to load; he is a very experienced man, and has been master of steam vessels for many years.

I am, &c.

The Board of Trade.

(signed) *W. Hinde.*

— No. 108. —

M. 2412.)

Mr. *James Westoll* to Board of Trade.

"*Arno.*"

213, High-street, Sunderland,
13 February 1875.

Sir,

In reply to your letter* of the 12th instant, I am utterly unable to say if your allegation is correct as the captain sent me no information of the draught of water; the loading was entirely in his own hands All I can say is the weight of cargo she had in should not have put her deep.

The vessel passed Gibraltar on the 11th instant, all well.

I am, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *James Westoll.*

— No. 109. —

(M. 4337.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
18 March 1875.

Sir,

The "Record of Draught of Water" of the 15th instant shows the following cases of overloading:—The "*Jubilee*," which sailed from North Shields on the 12th instant, "deep," and with a bad list; the "*Nuphar*," which left that port on the same day, dangerously deep; and the "*Monkseaton*," "deep." The "*Nuphar*" was bound for Alexandria, and as her condition, which showed a clear side of only 2 feet 3 inches, to a depth of hold of 18 feet 2-10ths, was doubtless brought under your notice officially, I should be glad to be informed what was the opinion of your "professional officers" on the subject of the loading

* This refers to the ordinary Circular. *See* Appendix (B.).

loading of this vessel? I further observe that on the 12th instant the "*Essex*" sailed from Hull, for Copenhagen, "deep," in which condition the "*Harry Russell*" left Barrow on the 15th instant.

I remain, &c.
(signed) *Samuel Plimsoll*,
per *Charles P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 110. —

(M. 4338.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
18 March 1875.

Sir,

A PERUSAL of the "Records of the Draught of Water" of the 13th instant brings to light three cases of overloading, to which I beg to draw your attention. Thus, the "*Ardeer*" sailed from Ardrossan on the 11th instant with a cargo of iron for Fleetwood, "deep." On the following day the "*Mary Anning*" left Cardiff in the same condition on a long voyage, viz., bound for Bahia, whilst the "*Dovercourt*" must, I think, be considered to have been "deep" when, on the same day, she sailed from Swansea for Singapore, though this case is far less glaring than many others which I have ventured to bring under your notice.

I remain, &c.
(signed) *Samuel Plimsoll*,
per *Chas. P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 111. —

(M. 4338.)

Board of Trade to Mr. *S. Plimsoll*, M.P.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
30 March 1875.

Sir,

WITH reference to your letters of the 18th instant, drawing attention to certain cases of alleged overloading, I am directed by the Board of Trade to inform you that before your letters were received the cases alluded to by you had been brought to the notice of their professional officers, and, where necessary, dealt with by the Board of Trade.

I am to add, in reference to the case of the "*Nuphar*," that that vessel was, in the opinion of their professional officers, overladen, and that before sailing she was detained and lightened to the satisfaction of this Board's surveyors.

I am, &c.
(signed) *R. G. C. Hamilton.*

Samuel Plimsoll, Esq., M.P.,
4, Victoria-street, S.W.

— No. 112. —

(M. 4869.)

Messrs. *J. Young, Ehlers & Co.* to Board of Trade.

32, Great St. Helen's, London,
30 March 1875.

Sir,

MR. F. D. LAMBERT has handed your letter* of the 19th instant to us, as managers of the steamship "*Jubilee*," and we have to inform you that we have inquired into the matter referred to, and find that the list was caused through more

* This letter refers to the ordinary Circular. *See* Appendix (B.).

more fire coal being put in one bunker than in the other. The steamer is not usually so laden, and we have cautioned the captain to be more careful in future.

We are, &c.
(signed) *J. Young, Ehlers & Co.*,
per *E. Drew.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 113. —

(M. 4296.)

Mr. *J. H. Anning* to Board of Trade.

Cardiff, 18 March 1875.

Sir,

I BEG to acknowledge the receipt of your letter* of the 16th instant, referring to the freeboard of my schooner "*Mary Anning*," of Plymouth.

In reply, I have to state the above vessel is now 14 years old, and has always been loaded down to same draught of water as she was on sailing hence last Saturday. She has always performed her voyage in perfect safety, not having lost so much as a piece of bulwark during that time.

This vessel has a good sheer and a good arching to her decks; and if her freeboard was measured fore and aft and averaged, would give more than three inches to every foot depth of hold, and 25 per cent. floatage above water. I have had 38 years' experience as boy, seaman, master, and owner with these small vessels, and I have always found them perfectly safe, loaded as the above vessel was on sailing.

I am, &c.
(signed) *J. H. Anning.*

Thomas Gray, Esq.,
Assistant Secretary, Board of Trade.

— No. 114. —

(M. 4296.)

Board of Trade to Mr. *J. H. Anning.*

Draught of Water.

Board of Trade, Whitehall Gardens,
27 March 1875.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 18th instant, relative to the loading of the "*Mary Anning*," when sailing from Cardiff on the 12th instant, and in reply to state, that they will be glad to be informed how the vessel makes her voyage.

I am, &c.
(signed) *Thomas Gray.*

J. H. Anning, Esq., Shipowner,
Cardiff.

— No. 115. —

(M. 7977.)

Mr. *J. H. Anning* to Board of Trade.

Re *Mary Anning*'s Draught of Water.

Cardiff, 25 May 1875.

Sir,

IN reply to your letter of the 27th March last, I now beg to inform you that the above vessel arrived at Bahia, all safe, on the 27th April

She had some very bad weather on passage out.

I am, &c.
(signed) *J. H. Anning.*

Thomas Gray, Esq.,
Assistant Secretary, Marine Department,
Board of Trade.

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* This letter refers to the ordinary Circular. *See* Appendix (B.).

— No. 116. —

(M. 4617.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 23 March 1875.

THE cases of overloading shown by the "Records of Draught of Water" of the 17th, 18th, 19th, and 20th instant are so numerous, that I have deemed it best to put them in a tabular form, as follows:—

Date of Record.	Date of Sailing.	Port of Departure.	Name of Vessel.	REMARKS.
17 March 1875	16 March 1875	Cardiff - -	Glide - -	"Deep."
17 March „	16 March „	- ditto - -	Enterprise -	"Deep."
17 March „	16 March „	- ditto - -	Gathorne - -	"Deep," with a list.
17 March „	16 March „	Middlesborough	Fitzwilliam -	"Very deep."
17 March „	16 March „	Liverpool - -	Mary - -	"Deep."
18 March „	17 March „	Barrow - -	Lady Downshire	"Deep."
18 March „	17 March „	Cardiff - -	Dairymaid -	"Deep."
18 March „	17 March „	Middlesborough	Genova - -	"Very deep."
18 March „	17 March „	North Shields -	Fenella - -	"Deep."
18 March „	17 March „	- ditto - -	Charles Mitchell	"Very deep."
19 March „	18 March „	Cardiff - -	Tinto - -	"Very deep."
19 March „	18 March „	Glasgow - -	Durley - -	"Deep."
19 March „	18 March „	Sunderland -	Hugh Streatfield	"Deep."
19 March „	18 March „	Swansea - -	Cæsaræa - -	"Deep," with a list.
20 March „	19 March „	Cardiff - -	William Banks	"Dangerously deep."
20 March „	19 March „	- ditto - -	Sir Bevis - -	"Very deep."
20 March „	18 March „	Middlesborough	Glencoe - -	"Very deep."
20 March „	18 March „	- ditto - -	Sumus - -	"Very deep."
20 March „	19 March „	- ditto - -	Nellie Wise -	"Deep," with a list.
20 March „	19 March „	North Shields -	Sandsend - -	"Very deep."
20 March „	19 March „	- ditto - -	John Williamson	"Deep."
20 March „	19 March „	- ditto - -	Charlaw - -	"Deep."
20 March „	19 March „	Swansea - -	Emily - -	"Deep."

I am, &c.

(signed) *Samuel Plimsoll*,
per *Chas. P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 117. —

(M. 4575.)

Mr. *S. Dewdney* to Board of Trade.

Sir, Brixham, 22 March 1875.

I HAVE no information respecting the freeboard of the brigantine "*Glide*" on leaving Cardiff on the 16th instant, and beg to refer you to my letter to you, dated 4th March 1874*, respecting her. She has not more than her usual cargo on board.

Yours, &c.

(signed) *Saml. Dewdney.*

Thos. Gray, Esq.,
Secretary, Board of Trade.

— No. 118. —

(M. 5062.)

Messrs. *Hacquoil Brothers* to Board of Trade.

Sir, Cardiff, 3 April 1875.

IN reply to your letter† of the 22nd ultimo, referring to the "*Cæsaræa*" steamship having sailed from Swansea on the 18th ultimo for Barcelona with a list, we beg to say, that the list she had was caused by the bunker coals, one of her side bunkers being larger than the other.

We

* *See* p. 50, Parliamentary Paper 394, of 1874.

† This letter refers to the ordinary Circular. *See* Appendix (B.).

We may state that she usually completes her loading in the fore hold after side bunkers are full to put her in trim, but in this case, the cargo was all shipped before the side bunkers.

This was explained by our manager to your surveyor at the time.

She arrived at Barcelona on the 30th ultimo, all well.

We are, &c.

The Assistant Secretary, (signed) *Hacquoil Brothers.*
Marine Department, Board of Trade.

— No. 119. —

(M. 4798.)

Mr. *Louis Guéret* to Board of Trade.

Sir, Cardiff, 29 March 1875.

In reply to your favour * of the 24th instant, relating to the freeboard when loaded of my steamer "*Wm. Banks*," I have to inform you that on the voyage in question she was loaded to her usual marks, and has made a quick run to Havre and back; she is at present in this port loading for Havre, to which place she has been trading regularly for the past seven or eight months. I have also questioned the master on the subject, and he informs me that the ship behaves admirably when at sea, and that he does not consider her to be too deeply laden.

I remain, &c.

The Assistant Secretary, (signed) *Louis Guéret,*
Marine Department, Board of Trade. Managing Owner.

— No. 120. —

(M. 4719.)

Messrs. *G. T. Harper & Co.* to Board of Trade.

Oriental-place, Southampton,
Sir, 25 March 1875.

We beg to acknowledge the receipt of your circular letter * of the 24th instant, informing us that our steamer "*Sir Bevis*" had been reported as leaving Cardiff on the 19th instant with coal for Southampton, having a clear side of 2 ft. 2½ in. only; and, in reply, have to inform you that the destination of this steamer was Brindisi, and not Southampton. By the report from the captain on sailing (copy of which I have the honour to enclose) the amount of clear side is stated as being 2 ft. 6½ in. in fresh water, with an estimated rise of three inches on getting into salt water, as well as a lightening of one inch per day for consumption of coal.

This steamer has made many voyages with safety and regularity with heavier cargoes than the present, and relying on that fact as well as the experience of our captain we are quite satisfied she was not overladen.

A copy of the log of the voyage shall be forwarded to you.

We have, &c.

The Assistant Secretary, (signed) *G. T. Harper & Co.*
Marine Department, Board of Trade.

Enclosure in No. 120.

Draught of water of steamship "*Sir Bevis*" leaving Cardiff, 19th March 1875. In dock with fresh water—

Draught - - Aft, 17 ft. ½ in.
„ - - Forward, 16 ft. 1 in.

Freeboard

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* This letter refers to the ordinary Circular. *See* Appendix (B.).

Freeboard from tonnage deck, 2 ft. 6½ in. in lowest part. Consider when steamer in salt water will rise three inches. Quantity of coals burning daily. Steamer will lighten one inch per day.

(signed) *Thomas Kemp*,
Master.

— No. 121. —

(M. 4719.)

Board of Trade to Messrs. *G. T. Harper & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
12 April 1875.

Gentlemen,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 25th ultimo, stating that the steamship "*Sir Bevis*" when sailing from Cardiff on the 19th ultimo, had a clear side of 2 ft. 6½ in., instead of 2 ft. 2½ in. as reported to them, and in reply to state that, looking to the report of their surveyor, they see no reason to doubt the accuracy of his measurements on the occasion referred to.

I am to add that the freeboard was measured at the lowest part of the vessel's side.

I am, &c.
(signed) *Thomas Gray.*

Messrs. G. T. Harper & Co., Oriental-place, Southampton.

— No. 122. —

(M. 5621.)

Messrs. *G. T. Harper & Co.* to Board of Trade.

Steamship Owners, Oriental-place, Southampton,
12 April 1875.

Sir,

With further reference to your circular letter of the 24th ultimo, relating to the loading of our steamship "*Sir Bevis*," we now beg to send for the information of your department a copy of the log of this steamer from Cardiff to Brindisi; the captain's statement thereon, and an account of the weights carried by this steamer on previous voyages; and bearing in mind the very successful manner in which this steamer has done her work at all seasons of the year, we beg to submit we are justified in maintaining she was not overloaded on her last outward voyage as reported by you.

We are, &c.
(signed) *G. T. Harper & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

Enclosures in No. 122.

Copy of Log of the Steamship "*Sir Bevis*" from Cardiff to Brindisi with a Cargo of Coal. 1875.

Friday, March 19th.—First part of this day cloudy; middle part freshening breeze and cloudy; at 5 p.m. cast off and proceeded to sea with a pilot on board. Draught of water aft 17 feet, forward 16 feet; at 11.20 off Lundy Island. Latter part less wind with drizzling rain; distance by log 65 miles. Wind N.N.W.

Saturday, March 20th.—Throughout this day light breezes and fine weather, at 9.45 off the Wolf Rock. Wind veering to the eastward; distance 192 miles; lat. 49.42 N.; long. 6.4 W.

Sunday, March 21st.—Throughout this day increasing breeze and fine; midnight strong breeze, and fine with swell; distance 204 miles; lat. 46.44 N.; long. 8.12 W. Wind E.

Monday, March 22nd.—First and middle part of this day strong wind and clear weather, high sea running; vessel shipping some water at times; distance 204 miles; lat. 43.27 N.; long. 10.15 W. Wind E.

Tuesday, March 23rd.—Throughout this day pleasant breeze and weather; 4.45 p.m. off Burlings, distant about five miles; at 9, off Cape Roca Light; distance 207 miles; lat. 40.00.; long. 10.2 W. Wind E.

Wednesday, March 24th.—First part pleasant breeze and weather, middle and latter part fresh breeze and clear; midnight, strong breeze and heavy swell from the eastward; engines going half speed; distance 172 miles; lat. 36.55 N.; long. 8.48 W. Wind E.

Thursday, March 25th.—Throughout this day increasing gale, with a heavy head sea, vessel shipping some water at times; at 4 p.m. sighted the land bearing E.; at 8, Trafalgar Light bearing N.E., distance about eight miles; distance 94 miles; lat. 36.14 N.; long 6.42 W. Wind Easterly.

Friday, March 26th.—First part of this day heavy gale and cloudy; latter part heavy gale with rain; at 9.45 a.m. Trafalgar Lighthouse bearing N. At 6.30 p.m., came to anchor in Gibraltar Bay not thinking it judicious to proceed.

Saturday, March 27th.—First part of this day strong gale with heavy rain; middle part moderating; at 2.45 p.m. weighed anchor, and steamed out of the bay, and proceeded; at 3.15, Europa Pt. set log. Latter part light breeze and cloudy with a swell from the eastward; distance 50 miles. Wind E.

Sunday, March 28.—Throughout this day light variable winds, with a swell from the eastward; at 14.45 Cape de Gata bearing N., distant about 10 miles. Distance run 192 miles; lat. 36.34 N.; long. 2.10 W. Wind E.; variable.

Monday, March 29th.—First and middle part pleasant breeze and weather; latter part strong breeze from the E. Midnight wind veering to the N.; distance 179 miles; lat. 37.10 N.; long. 1.55 E.

Tuesday, March 30th.—First part strong breeze with a heavy swell from the North, vessel shipping some water, at times middle part moderating; at 7 p.m. Cape Bougaroni Light bearing North. Midnight less wind and sea; distance 187 miles; lat. 37.25 N.; long. 5.12 E. Wind N.N.W.

Wednesday, March 31st.—Throughout this day light breeze, with passing showers; at 9.50 a.m. passed Galita Island, distant three miles. Distance 192 miles; lat. 37.34 N.; long 9.22 E. Wind N.W.

Thursday, April 1st.—Throughout this day light breeze and cloudy with passing showers; at 5 a.m. Pantellaria, bearing S.W.; 5.45 p.m. Cape Scalambra bearing N.; distance 184 miles, lat. 37.49 N.; long. 13.14. E. Wind N. and N.E.

Friday, April 2nd.—First and latter parts light breezes and clear weather; at 10 am. Cape Spartivento bearing N.W., distant five miles; at 8.40 p.m. Cape Crotona bearing N.W., distant four miles. Distance 192 miles; lat. 37.54 N.; long. 16.42 E. Wind N.E. and N.W.

Saturday, April 3rd.—Throughout this day light breeze and clear weather; at 5.30 a.m Cape St. Maria di Leuca, bearing W., distant four miles; at 2 p.m. off Brindisi, a pilot came on board and entered the harbour, and made fast at the west quay; at 4 p.m. ready for discharging cargo. Distance 112 miles.

(signed) *Ph. J. Marett*, Chief Officer.
Steamship "*Sir Bevis.*"

Brindisi.

Copy of Letter received from Captain *Kemp*, Master of the Steamship "*Sir Bevis.*"

Dear Sirs, Brindisi, 5 April.

Your letter dated the 30th March to hand and contents noted.

Respecting the complaint the Board of Trade has made? They have taken the measurement from the lower part of the deck; myself, chief officer and chief engineer carefully measured the steamer whilst lying at Cardiff, and the lowest part we could get at, that is taking it from the top part of the tonnage deck, was 2 ft. 6½ in., and we all passed the remark that the steamer was in good trim.

Enclosed is the draught of water the steamer has drawn, and also the quantity of cargo taken in; our usual draught is three inches less fore and aft when we arrive in Gibraltar Bay. I then took particular notice of the steamer's draught; she had then lifted nine inches, proving I was right in my remarks at Cardiff, three inches for rise in salt water, and six inches for burning of coal. I always consider in open and summer voyages, 16 feet and 17 feet

17 feet is a very good draught, although we had such heavy weather from St. Vincent to Gibraltar, we did not do any damage, &c. &c.

(signed) *Thomas Kemp,*
Master of the Steamship
" Sir Bevis."

Messrs. G. T. Harper & Co.,
Southampton.

DRAUGHT of WATER, the Steamer *" Sir Bevis"* drew when leaving ports in 1873–74, 1875.

LEFT Cardiff 28th March 1873 for Malta, cargo 1,000 tons, bunkers 265. Draught 17.1 and 16 ft. 2 in.

Left Middlesborough 19th May 1873 for Taganrog, cargo 1,001 tons rails, 252 tons bunkers, draught 17 feet and 16 feet.

Left Cardiff 19th December for Hamburg, cargo 1,113 tons, bunkers 105 tons. Draught 16 ft. 9 in. and 15 ft. 9 in., freeboard 2 ft. 9 in.

Left Cardiff 4th April 1874 for Port Said, cargo 1,086 tons, bunkers 165. Draught 17 feet and 16 feet.

Left Cardiff 17th June 1874 for Deadeagh, cargo 950 tons rails, 300 tons bunkers. Draught 17 ft. 1 in. and 16 feet.

Left Cardiff 19 March 1875 for Brindisi, cargo 955 tons, 288 tons bunkers. Draught 17 feet and 16 feet.

(signed) *Thomas Kemp,*
Master.

Brindisi.

— No. 123. —

(M. 6777.)

Messrs. *W. H. Wise & Son* to Board of Trade.

West Hartlepool, 3 May 1875.

Sir,

IN answer to your inquiry of 24th March, we beg to inform you that our steamship *" Nellie Wise"* performed her voyage from Middlesbro' to Taganrog very satisfactorily, arriving there on the 17th ultimo, after waiting several days at Kertch for the opening of the navigation; her list was accidental and this was put right by re-arranging bunker coals. She usually carries 100 tons more cargo.

We are, &c.
(signed) *W. H. Wise, & Son.*

Thomas Gray, Esq., Assistant Secretary,
Marine Department, Board of Trade.

— No. 124. —

(M. 4751.)

Mr. *S. Plimsoll,* M.P., to Board of Trade.

4, Victoria-street, S.W.,
25 March 1875.

Sir,

I BEG to acknowledge the receipt of "Records of Draught of Water," of the 22nd instant, which shows the following cases of overloading: the *" Kate"* sailed from Ardrossan, on the 19th instant, for Dublin, " deep," and on the following day, the *" Margaret Banks"* and the *" Joseph Love"* left Cardiff, the former " very deep " and the latter " deep." I further notice that on the last-named day the *" Henry Bolckow"* sailed from Sunderland, deeply laden.

I remain, &c.
(signed) *Samuel Plimsoll,*
per *Chas. P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade, S.W.

(For Board of Trade reply, *see* Appendix A.)

— No. 125. —

(M. 4750.)

Mr. *W. Banks* to Board of Trade.

Steamship "*Margaret Banks.*"

Sir, Paris, March 1875.

In reply to your inquiry* I beg to inform you that this vessel took cargo and bunkers, all told—

1,194 tons - - - { 954 cargo. / 239 bunkers.

The cargo was loaded by myself and on my own account.

I am sure that with this cargo, viz., 100 tons under her carrying power she was not overladen but underladen. The captain in command of this ship is an exceptional man of superior standing and education; he has orders from me to load his ship with perfect safety to ship and crew, and more cannot be done. This interference of some parties at every moment is ruinous, and must sooner or later drive men to a foreign flag.

I conclude by saying that I do not admit her being deeply laden as to free side, for I do not know it nor indeed believe it. It may be that the captain of one ship will load her light forward, while another will load heavy forward.

Certainly in winter time with spar deck aft it is prudent to load light by the head; all these are matters an owner cannot regulate himself. All he can do is to have respectable captains, order them to load with perfect care, and if that will not do, sell his steamers and have done with it.

I will write to the captain and then communicate further on the subject of your letter.

Yours, &c.
(signed) *W. Banks.*

The Assistant Secretary,
Marine Department, Board of Trade,
London, S.W.

— No. 126. —

(M. 4750.)

Board of Trade to Mr. *W. Banks.*

Draught of Water.

Board of Trade, Whitehall Gardens,
6 May 1875.

Sir,

With reference to your letter received in this Department on the 27th ultimo, relative to the loading of the "*Margaret Banks,*" and stating your intention of communicating further on that subject, I am directed by the Board of Trade to inform you, that as no further information has been received from you, they will be glad to learn how the vessel has made her voyage.

I am, &c.
(signed) *G. J. Swanston.*

W. Banks, Esq., Shipowner,
16, Place Vendôme, Paris.

— No. 127. —

(M. 7093.)

Mr. *W. Banks* to Board of Trade.

32, Lombard-street, London, E.C.,
8 May 1875.

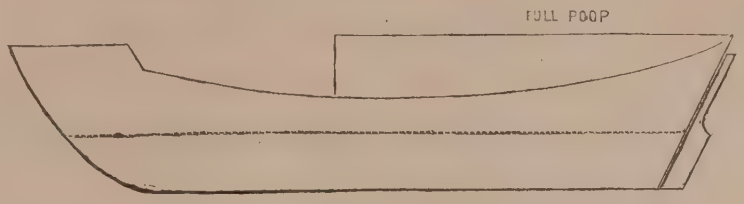
Sir,

In reply to your favour of the 6th May, and in continuation of my letter of the 27th March, I beg to inform you that the "*Margaret Banks*" made a quick passage to Barcelona, 10½ days, without incident to call attention.

I was in Barcelona on her arrival and noticed the chalk mark made on her free

* This letter refers to the ordinary Circular. *See* Appendix (B.).

free side on leaving Cardiff. It was about 2 ft. 2½ in. to 2 ft. 3 in. in the centre of ship at fore part of engine-room. The captain informed me that the free side, aft and fore, was much greater, and drew my attention to the shape of the ship which sheers down in the centre thus:—



The chalk mark was where the dotted line is in above drawing.

If the ship had been loaded more in after hold it is probable the free side forward would have been greater.

All I can say is that one ship loads different to another from her form, without reference to her displacement, and that we are now all of us at our wits end to know what to do. The ship had 954 tons of cargo and 246 tons of bunkers, in all, 1,200 tons, and as she has had in former times 1,300 tons, we thought this reasonable.

She is now about loading out again for Cadiz, and I will order the aft hold to be loaded heavier and the fore hold lighter, and see whether this will make her less deep in the sheer. Although in my sea library I find it stated that ships with a good low sheer, as described in the "*Margaret Banks*," are the best sea boats, I will however, in obedience to your views, have a talk with the captain about a new mode of loading.

See Chapman's Book on Ships, quite a standard work

I remain, &c.
(signed) *W. Banks.*

The Assistant Secretary,
Marine Department, Board of Trade,
London, S.W.

— No. 128. —

(M. 4871.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
30 March 1875.

Sir,

I BEG to draw your attention to a case of apparently dangerous overloading, shown in the "Record of Draught of Water," of the 24th instant. I refer to the "*Eastella*," which, with a depth of hold of 16 feet 5-10ths, sailed from North Shields on the 23rd instant for Barcelona, with a clear side of only 1 ft. 7 in. Without some countervailing advantages in the shape of a spar-deck, &c., it is eident that this vessel would have sailed dangerously deep. I further observe, that on the same day, the "*Fearless*" sailed from Greenock for Demerara, "deep," and the "*Malaga*," from Middlesbro', for London, in like condition.

I am, &c.
(signed) *Samuel Plimsoll,*
per *Chas. P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 129. —

(M. 4891.)

Messrs. *Jackson, Beaumont & Co.* to Board of Trade.

"*Eastella.*"

76, Lowgate, Hull, 31 March 1875.

Sir,

WE beg to own the receipt of your favour of yesterday,* and will take care to advise you of the arrival of this steamer at Barcelona. We may add that the loading

* This refers to the ordinary Circular. *See* Appendix (B.).

loading of our vessels is entirely left to the officers and crew, except that they have clear instructions from us never to load the ships so as in the slightest to endanger their safety, and we therefore feel pretty confident the "*Eastella*" would be perfectly seaworthy when leaving Shields. The captain, a naturalised foreigner, is a cautious, careful, and steady man, and the ship is of such a construction that during the four years she has been built, and when she has encountered the heaviest storms almost on record, she has not, to the best of our recollection, ever received the least damage worth mentioning. The quantity of cargo taken depends of course on the season of the year. We think a good proof of the character of the ship is to be found in the fact that the master has been with her since she was launched, and several of the crew have been in her for many voyages, indeed have made her their home.

We are, &c.
(signed) *Jackson, Beaumont & Co.*

The Assistant Secretary,
Marine Department, Board of Trade,
Whitehall Gardens, S.W.

— No. 130. —

(M. 4949.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
1 April 1875.

Sir,

I BEG to direct your attention to some cases of overloading, shown in the "Record of Draught of Water," of the 27th ultimo. Thus, the "*Saxon Maid*" sailed from Belfast on the 25th ultimo for Barrow, deeply laden with iron ore. On the previous day the "*Northumbria*" left North Shields in similar condition, whilst the "*Gazelle*" sailed from the same port, "very deep," in which state the "*Carlotta*" left Sunderland on the 25th ultimo for Dieppe.

I avail myself of this opportunity of acknowledging receipt of your two letters dated the 31st ultimo.

I remain, &c.
(signed) *Samuel Plimsoll*,
per *Chas. P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 131. —

(M. 5044.)

Messrs. *Cory, Lohden & Co.* to Board of Trade.

West Hartlepool, 2 April 1875.

Sir,

WE received your letter* of 31st ultimo respecting the steamship "*Gazelle.*" She arrived at Rouen on the 27th ultimo in perfect safety. We usually load her as she was loaded this voyage, and we assert that she was not overladen.

We are, &c.
(signed) *Cory, Lohden & Co.*

Thomas Gray, Esq.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 132. —

(M. 5044.)

Board of Trade to Messrs. *Cory, Lohden & Co.*

Unseaworthiness.—Draught of Water.

Board of Trade, Whitehall Gardens,
10 April 1875.

Gentlemen,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 2nd instant, relative to the loading of the steamship "*Gazelle*," when sailing from North Shields on the 24th ultimo, and in reply to inform you that that vessel was ordered to be detained and lightened, but had sailed before the order for detention had arrived at North Shields.

I am, &c.
(signed) *R. G. C. Hamilton.*

Messrs. Cory, Lohden & Co.,
Steamship Owners, West Hartlepool.

— No. 133. —

(M. 5106.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
3 April 1875.

Sir,

In the "Record of Draught of Water" of the 30th ultimo, I observe that the "*Foyle*" sailed from Greenock on the 27th ultimo, "deep." On the same day the "*A. Strong*" left Cardiff apparently in a similar condition. I have reason to believe, however, that, owing to her construction, her case was more apparent than real. Her depth of hold is 19 ft. 6-10ths, and she showed a mean clear side of only 2 ft. 8½ in. On the 30th ultimo, the "*Charlaw*" appears to have sailed from North Shields, deeply laden.

I am, &c.
(signed) *Samuel Plimsoll,*
per *Chas. P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 134. —

(M. 5020.)

Mr. *Oliver Sharp* to Board of Trade.

Draught of Water.—Steamship "*A. Strong.*"

Sir,

North Shields, 2 April 1875.

Your letter,* dated 30th March 1875, has been forwarded to me by Mr. Anthony Strong, who knows nothing about the circumstances referred to by you. The writer of this was present at the loading of the steamer, but did not measure the clear freeboard of the boat after being loaded, as the vessel was loaded with the water in the ballast tanks, and also water in the bilges, in consequence of repairs going on in the stokehole and boilers. This gave rise to the mistaken trim of the vessel being 2 feet by the stern instead of 1 foot only, her usual trim. The water the boat drew when examined by your second surveyor was 16¼ feet forward and 18¼ feet aft, which draft gives a clear side in the centre of the steamer of about 38 inches; but being so much by the stern put the vessel, as indicated by your surveyor, just in front of the poop; hence your complaint. Assuming the vessel had been placed on an even keel, which is not a very

* This refers to the ordinary Circular. *See* Appendix (B.).

a very desirable trim for the "*A. Strong*," she would have shown a clear side in the lowest part in excess of 2 inches to the foot depth of hold clear side. The boat's usual trim when loaded in salt water, which it is not at Cardiff, is 17 feet forward and 18 feet aft, in which trim the boat has been navigated as her maximum draft of water since being built without once having met with any description of accident whatever from such loading.

The writer having been concerned in the building, having commanded her and since managed the steamer, has the greatest confidence in the seaworthiness of her, as every precaution was adopted, while under construction, to make her perfectly safe under all the conditions which such steamers are liable to.

There are no possible means for water getting into the boat from above, as all coaling and hatches and inlets are protected to 6 feet above the level of the main deck; all coombings are 3 feet high, and every particle of deck arrangements are of iron only. I mention this to show we did all in our power to make a perfect sea boat.

Again, in the loading of this steamer all extraordinary strains are avoided by keeping the weights always equalised on her centre, not allowing any athwartship bunkers, the bane of all long steamers, and keeping the side bunkers nearly always full of coals. What gives the boat a bad appearance of being overloaded is that the bulwarks are only 3 ft. 6 in. above the deck; therefore she always appears low. In expressing my own opinion of the loading of steamers, I think the trim of steamers are best left in the hands of those fully conversant with the peculiarities, and being practical men themselves as steamboat *sailors*.

Unfortunately, little regard is paid to the loading by but few persons concerned in them, and so many having interests in them knowing nothing about the sea or ships. I am sorry in this case that you have been compelled to call attention to this steamer: her never having been in trouble ought to be some allowance in her favour, and will be pleased when some definite course is adopted by your honourable Board about load lines.

Yours, &c.

The Assistant Secretary, Marine Department, Board of Trade. (signed) p. pro *John Wigham*, *Oliver Sharp*, Manager.

— No. 135. —

(M. 5020.)

Board of Trade to Mr. *Oliver Sharp*.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
19 April 1875.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 2nd instant, relative to the loading of the steamship "*A. Strong*," when leaving Cardiff on the 27th ultimo, and in reply to inform you that that vessel was ordered by them to be detained and lightened to the satisfaction of their surveyors, but had sailed before the order for detention had arrived at Cardiff.

I am, &c.

Oliver Sharp, Esq., Steamship Owner, North Shields. (signed) *R. G. C. Hamilton.*

— No. 136. —

(M. 5363.)

Mr. *Oliver Sharp* to Board of Trade.

Steamship "*A. Strong*."

Sir, North Shields, 8 April 1875.

THE above steamer, bound from Cardiff to Port Said, passed Gibraltar on Saturday last, all well.

Yours, &c.

The Assistant Secretary, Marine Department, Board of Trade. (signed) p. pro *John Wigham*, *Oliver Sharp*.

— No. 137. —

(M. 5176.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
5 April 1875.

Sir,

In the "Record of Draught of Water" of the 1st, I perceive that on the 31st ultimo the "*Roath*" sailed from Cardiff "deep," whilst, on the same day, the "*Marne*" left Swansea in similar plight. The "Record" of the 2nd instant appears to show that on the previous day the "*Thistle*" sailed from Middlesborough deeply laden. The same "Record" suggests that the "*Pansy*," which sailed from Cardiff on the 1st instant, was too "deep;" yet, in the absence of a personal investigation, I do not, looking to her construction, feel justified in asserting that she was overladen. Probably your officers, on the spot, would be able to arrive at a correct diagnosis.

I am, &c.
(signed) *Samuel Plimsoll*,
per *Chas. P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 138. —

(M. 5409.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
8 April 1875.

Sir,

I beg to call your attention to some apparent cases of overloading, shown in the "Records of Draught of Water" of the 3rd, 5th, and 6th instant. I use the qualification, because it is quite possible that some of the vessels indicated may possess countervailing elements of safety, of which the "Records," from their imperfect character, leave me in ignorance.

On the 1st instant the "*Corisande*," the "*Marion*," and the "*Amadis*," sailed from Cardiff for Barcelona, Acheen, and Messina respectively, the first two "deep," and the third dangerously so, and with a bad list. On the 31st ultimo the "*Chevington*" left Hartlepool "very deep," and with a list. On the 2nd instant, the "*Stephenson*" sailed from Hull, for Alexandria, "very deep," and with a bad list; and the "*Rinaldo*" left Sunderland, for Hamburg, "deep." The "Record," of the 5th instant, supplies the following cases: The "*Alethea*," from Cardiff, on the 3rd, "very deep;" the "*Arbutus*," from Greenock, on the 2nd, "deep;" the "*Aberdeen*," from North Shields, on the same day, "deep," with a bad list; the "*Jubilee*," from the same port, on the following day, "deep" the "*Maude*," from Hull, on the 3rd, "very deep;" the "*Hilda*," from Middlesbro', on the 3rd, "very deep;" and the "*Glengarry*," "deep." In reference to my letter of the 5th instant, misdated the 6th, may I ask whether any steps were taken by the Board to test the alleged overloading of the "*Cardigan Castle*," a small vessel about to sail for Victoria, and if so, with what result?

I remain, &c.
(signed) *Samuel Plimsoll*,
per *Chas. P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 139. —

(M. 5409.)

Board of Trade to Mr. *S. Plimsoll*, M.P.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
19 April 1875.

Sir,

With reference to your letter of the 8th instant, calling attention to certain cases of alleged overloading, I am directed by the Board of Trade to inform you that before your letter was received the cases alluded to by you had been brought before the notice of their professional officers, and, where necessary, acted on by the Board.

I am to add, that the "*Cardigan Castle*," to which vessel you refer in your letter, had, in the opinion of this Board's officers, sufficient freeboard.

I am, &c.
(signed) *G. J. Swanston.*

Samuel Plimsoll, Esq., M.P.,
4, Victoria-street, S.W.

— No. 140. —

(M. 5464.)

Mr. *G. J. Hay* to Board of Trade.

Sunderland, 9 April 1875.

Sir,

I have this morning only received your letter,* dated 6th April (M——). I am exceedingly surprised and annoyed to find from your complaint that the "*Corisande*" left Cardiff with a list of eight inches, and I shall consider whether not to discharge her master on the ship's return, as he held such positive written instructions from me, and has done (continually repeated) since this vessel's case was specially considered by your Board and myself conjointly, at much expense and inconvenience, that I believed complaint of any sort in the future would be quite impossible. It was a matter that could so very easily have been remedied (and probably would be by using coal from one bunker before the vessel reached Lundy), that I regret much your surveyor did not tell the master his opinion. I can only conclude the master stopped the loading suddenly, finding the vessel was loaded, but I find short of the quantity usually carried to load her.

I am, &c.
(signed) *G. J. Hay.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 141. —

(M. 5708.)

Mr. *G. J. Hay* to Board of Trade.

Sunderland, 13 April 1875.

Sir,

I have now the honour to inform you that I this morning received a telegram from Barcelona advising the arrival yesterday morning of the "*Corisande*" steamship, all well. I beg also to enclose a letter from the pilot who took the vessel to sea from Cardiff, showing that the master rectified the matter, although he did not receive any intimation to do so. I have no doubt the refuse, &c., had accumulated, owing to difficulty of its disposal in port.

I am, &c.
(signed) *G. J. Hay.*

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

Enclosure in No. 141.

Pilotage Office, Bute Docks, Cardiff,
10 April 1875.

Sir,

When the "*Corisande*" left the docks she had a slight list to starboard, caused by the ashes, &c., piled on the deck. As soon as this was cleared away the ship was perfectly right. When I left her at Lundy the wind was ahead (fresh); everything all well.

I am, &c.
(signed) *James Tamplin*, Pilot.

G. J. Hay, Esq.

— No. 142. —

(M. 7630.)

Mr. *G. J. Hay* to Board of Trade.

Sunderland, 18 May 1875.

Sir,

I have only now heard from the master of the "*Corisande*" regarding your complaint that she had left Cardiff with a list. He denies that she had any list on leaving, and complains that she was measured by your surveyor when she had not been twenty (20) minutes from the coal tip, a quantity of cargo being on the deck, and the stevedore's men still stowing the cargo. She had a list at that time, but says most positively that she was upright and in proper trim when they had finished, and when the vessel went to sea. I feel very reluctant to trouble your Board, but the master of this vessel has such positive instructions with a view to prevent complaint; and I have reprimanded nim so severely in consequence of your letter, that I shall feel particularly obliged if you will inquire at what time and where the vessel was, when measured, upon which the complaint was founded; also whether it is quite clear that she went to sea in the state alleged. I feel I am obliged, in justice to the master's statement, to write you on the subject, so that it may be certain with whom the error rests before I say more to the master.

I have, &c.
(signed) *G. J. Hay.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 143. —

(M. 7630.)

Board of Trade to Mr. *G. J. Hay.*

Draught of Water.

Board of Trade, Whitehall Gardens,
4 June 1875.

Sir,

With reference to your letter of the 18th ultimo, regarding the alleged list of your vessel the "*Corisande*" on sailing from Cardiff for Barcelona, on her recent voyage, I am directed by the Board of Trade to inform you that they have received a further report from their surveyors at Cardiff upon the subject, and, in accordance with your request, furnish you with the following particulars:—

The draught of water was taken at 6 p.m. on the 1st April 1875, the vessel at the time moving from the tip, and the master not being on board. The surveyor informed the mate of the list.

I am, &c.
(signed) *Thomas Gray.*

G. J. Hay, Esq., Shipowner,
Sunderland.

— No. 144 —

(M. 5519.)

Messrs. *Massey & Sawyer* to Board of Trade.

Revel, Helsingfors and Abo Steam Navigation Offices,
Hull, 10 April 1875.

Dear Sir,

In reply to your letter * addressed to E. P. Youell, Esq., Great Yarmouth, as to the draught of water of the steamship "*Maude*," of West Hartlepool, now registered at the port of Hull, and owned by us here, we beg to inform you that the said ship had only 1,107 tons of coals, *cargo and bunkers*, on board this voyage, which is the least quantity she has had for four years, and she has been in all descriptions of weather, and never suffered through being overladen. The vessel has a large poop, extending nearly half her length, and a very large top-gallant forecastle extending a considerable distance aft.

We suppose the freeboard has been taken amidships, just at the greatest bend of the sheer, and at the break of the poop, and owing to her construction, being a ship with a great amount of sheer, she may appear to be deep, when actually in good sea-going trim. Although the weather was very severe after she left here, she arrived at Gothenburg all well, after a quick passage, without any casualty.

We are, &c.
(signed) *Massey & Sawyer.*

The Assistant Secretary,
Marine Department, Board of Trade.

P.S.—Shall be glad to mark load line as soon as one is fixed upon.

— No. 145. —

(M. 6469.)

Mr. *R. J. Kay* to Board of Trade.

Sir,

27 April 1875.

Absence from home is the reason why I have not sooner answered your inquiry* of the 22nd instant.

I note that you are advised that the freeboard of the steamship "*Amadis*," on leaving Cardiff, was 1 ft. 7 in. *mean*, and that you are advised that the steamer was deeply laden.

Accepting the above figures as correct, they would show that the "*Amadis*" would have *two* feet freeboard in salt water, as the water in Cardiff Docks is perfectly *fresh*.

I respectfully beg to submit that two feet freeboard for a steamer of the build and model of the "*Amadis*" is a safe and sufficient freeboard.

Whilst stating this, I beg to call your attention to the following facts:—

1st. That the "*Amadis*" has iron decks fore and aft, *i. e.*, from stem to stern. The *sole* object of so decking the steamer was to give extra strength. The ordinary wooden decks would be 4 inches thick, at least; the iron decks are only half an inch, or, in some parts, 5-8ths of an inch.

2nd. That the steamer has a sheer of 5 feet *mean*.

3rd. That she has a full poop and topgallant forecastle.

4th. That all the hatches are raised from 2 feet to 2 ft. 6 in. above the deck.

In answer to your query, if the steamer is usually loaded to the same draught, I beg to state that this is only her second voyage. On the first voyage she was loaded to the same marks, and made a very quick Mediterranean voyage. This present voyage she left Cardiff at 4 p.m. on the 2nd April and arrived at Messina 14th April, at 6 a.m. The distance is 2,286 nautical miles. She encountered strong south-west winds across the bay, but sustained no damage.

Should

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* This refers to the ordinary Circular. *See* Appendix.

Should the advisers of the Board of Trade still consider, after these observations, that the steamer was deeply laden for the voyage, I should feel much obliged if you would please to inform me of their decision.

I am building a second steamer of exactly the same dimensions and model, and it will greatly depend on the answer I receive concerning the "*Amadis*" whether I alter or not, in a great measure, the plans of the new vessel.

Again apologising for not having sooner answered your letter,

I remain, &c.
(signed) *Richard J. Kay.*

The Assistant Secretary,
Marine Department, Board of Trade.

Please address, *this week*, to Colpike Hall, Lanchester, county Durham.

— No. 146. —

(M. 6469.)

Board of Trade to Mr. *R. J. Kay*.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
4 May 1875.

Sir,

With reference to your letter of the 27th ultimo, relative to the loading of the steamship "*Amadis*," when leaving Cardiff on the 2nd ultimo, and asking whether the Board of Trade still consider, looking to your remarks, that that vessel was too deeply laden, I am directed by the Board of Trade to state that they are advised that the "*Amadis*" would not have had two feet mean freeboard in salt water, and that, even if she had this freeboard, she would have been in their opinion too deep.

I am, &c.
(signed) *G. J. Swanston.*

R. J. Kay, Esq., Colpike Hall, Lanchester,
County Durham.

— No. 147. —

(M. 6972.)

Mr. *R. J. Kay* to Board of Trade.

(Care of the Rev. W. Taylor Smith, Tow Law, near Darlington,
County Durham.)

6 May 1875.

Sir,

Your esteemed letter of the 4th instant, marked M., and numbered 6469, has this day reached me.

I beg to thank you for your very straightforward and courteous answer to my inquiries regarding the loading of the screw steamer "*Amadis*."

This steamer is at present loading linseed in the Sea of Azoff.

On her return to this country I shall order the master to give her when coal laden and in salt water a freeboard of 2 ft. 3 in., which, had she wooden decks, is equal to a freeboard of 2 ft. 6 in.

I remain, &c.
(signed) *Richard J. Kay.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 148. —

(M. 6972.)

Board of Trade to Mr. *R. J. Kay*.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
13 May 1875.

Sir,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 6th instant, relative to the loading of the steamship "*Amadis*," and stating the freeboard to which you intend to load that vessel; and, in reply, to inform you that they are not at present prepared to indicate the exact amount of freeboard which the "*Amadis*" should have, but that they are advised that a clear side of 2 ft. 3 in. in salt water would be insufficient.

I am, &c.
(signed) *G. J. Swanston.*

R. J. Kay, Esq., care of the Rev. W. J. Smith,
Tow-Law, near Darlington.

— No. 149. —

(M. 7730.)

Mr. *R. J. Kay* to Board of Trade.

7, Ashburton-crescent,
Bulman Village, Newcastle-on-Tyne,
20 May 1875.

Sir,

I BEG to acknowledge receipt of your letter of 13th instant, marked M., and numbered 6972.

I much regret that the Board of Trade "are not at present prepared to indicate the exact amount of freeboard which the '*Amadis*' should have;" you also state that the Board of Trade is advised that 2 ft. 3 in. freeboard is insufficient for the "*Amadis*." I have no idea on what basis the advisers of the Board of Trade base their calculations as regards a freeboard, consequently I am quite unable to judge what freeboard they require.

As a master mariner of five years' experience as master of a steamer of very similar dimensions and constantly employed in dead weight carrying trades, and as one who has carefully studied what a freeboard should be, I consider that for the "*Amadis*" 2 ft. 3 in. freeboard, measured at break of long poop, is more than sufficient with a coal cargo.

Being quite convinced that this is a sufficient freeboard, I cannot, with due regard to the interests of my copartners, give the "*Amadis*" a greater freeboard unless compelled to do so by your authority.

I therefore most respectfully beg that you will advise me whether, in case of loading the "*Amadis*" to a freeboard of 2 ft. 3 in. with coals, you will feel it your duty to stop the vessel from proceeding to sea as unseaworthy.

If so, I respectfully request that you will inform me of the draught at *which* you will not stop the steamer as unseaworthy, and I submit that it is but just that this should be done now rather than after the steamer is loaded and ready for sea.

I am, &c.
(signed) *Richard J. Kay.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 150. —

(M. 7730.)

Board of Trade to Mr. *R. J. Kay*.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
24 May 1875.

Sir,

In reply to your letter of the 20th instant relative to the loading of the steamship "*Amadis*," I am directed by the Board of Trade to inform you that it is for the owners of the vessel to load her as they please, and to incur the risk of detention if they load her too deeply, and for the Board of Trade to detain, and not to advise. The responsibility must be with the shipowner.

The Board must decline altogether to fix a load-line or assist in fixing it, but they have given instructions to their own officers to detain the vessel should she be in their opinion too deeply laden.

I am, &c.
(signed) *Thomas Gray*.

Richard J. Kay, Esq.,
7, Ashburton-crescent, Bulman Village,
Newcastle-on-Tyne.

— No. 151. —

(M. 5405.)

Messrs. *Humble and Thompson* to Board of Trade.

7, Queen-street, Quayside, Newcastle-on-Tyne,
8 April 1875.

Sir,

With reference to your communication* of yesterday, we have made inquiry of the captain of the "*Chevington*" steamship as to whether the vessel had such a list as is named, and if so, what; and as soon as we hear from him, we shall advise result.

We are, &c.
(signed) *Humble and Thompson*.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 152. —

(M. 5811.)

Messrs. *Humble and Thompson* to Board of Trade.

7, Queen-street, Quayside, Newcastle-on-Tyne,
15 April 1875.

Sir,

Referring to our respects of 8th instant, we have made inquiry relating to the communication contained in yours of 7th, and find that you are partly correct in saying that the "*Chevington*" steamship sailed from Hartlepool on the 31st ultimo with a list to starboard, but same was not so great as you represent.

We have given such instructions to our captain as will prevent a recurrence of this in future.

She made the voyage in question in perfect safety.

Yours, &c.
(signed) *Humble and Thompson*.

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 153. —

(M. 5440.)

Mr. *J. Shaw Campbell* to Board of Trade.

1, Great Brunswick-street, Dublin,
Sir, 9 April 1875.

I AM in receipt of your letter of the 8th instant, respecting the steamship "*Arbutus*". That vessel arrived here on Saturday last, 3rd instant, after a passage of 21 hours, from Greenock. During the winter months she has never more than 1 ft. 7 in. of a clear side, and in the summer months it is about 1 ft. 6 in. I have been running her for upwards of three years at those depths, during which time she has carried to this port about 250 cargoes of coal, without accident of any kind, and without ever having had to take shelter in a port or harbour.

I am, &c.
The Assistant Secretary, (signed) *J. Shaw Campbell.*
Marine Department, Board of Trade.

— No. 154. —

(M. 5439.)

Messrs. *E. S. Jobson & Co.* to Board of Trade.

Steamer Department, West Hartlepool,
Sir, 9 April 1875.

WE beg to acknowledge receipt of your letter * of yesterday's date addressed to our Mr. Jobson.

In reply, our steamship "*Alethea*" sailed from Cardiff on the 5th instant, and we yesterday morning received a telegram from the captain informing us of her arrival at Havre.

We do not consider that this steamer was deeply laden.

We are, &c.
The Assistant Secretary, (signed) *E. S. Jobson & Co.*
Marine Department, Board of Trade.

— No. 155. —

(M. 5439.)

Board of Trade to Messrs. *E. S. Jobson & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
Gentlemen, 16 April 1875.

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 9th instant relative to the loading of the steamship "*Alethea*," when leaving Cardiff on the 5th instant, and in reply, to state that if this vessel loads as deeply as she was reported to have done on that occasion, she will probably be detained and lightened to the satisfaction of this Board's officers.

I am, &c.
E. S. Jobson & Co., (signed) *G. J. Swanston.*
Timber Merchants, West Hartlepool.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 156. —

(M. 5497.)

Messrs. *Adam & Co.* to Board of Trade.

Sir, Aberdeen, 9 April 1875.

We have received your letter* of 8th instant, and note contents.

Will you be good enough to state how the steamship "*Aberdeen*" should be laden, and we shall convey your instructions to our captain, who wrote us on the 2nd instant from Shields, stating as follows:—

"We have had the Board of Trade surveyor on board; he says we have 2 ft. 6 in. freeboard. We have that fully; we are drawing 18 ft. 4 in. aft, and 15 feet forward. We are a little deeper aft than I wanted her, but that is owing to have to fill our water after she was loaded; but we are in splendid trim on the whole."

We have every confidence in the captain of the steamer "*Aberdeen*," and have instructed him not to overload or improperly load his ship, and we are therefore at a loss to know what more we can do; perhaps, however, you can tell us.

Yours, &c.

The Assistant Secretary, (signed) *Adam & Co.*
Marine Department, Board of Trade.

— No. 157. —

(M. 5497.)

Board of Trade to Messrs. *Adam & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,

Gentlemen, 21 April 1875.

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 9th instant, relative to the loading of the steamship "*Aberdeen*" when leaving North Shields on the 2nd instant, which vessel you state was reported by the master as being in splendid trim, and in reply, to inform you that looking to the report of their surveyor, they see no reason to doubt the accuracy of his measurements, and that the master, who was present when they were taken, did not then dispute their correctnesss.

I am, &c.

Messrs. Adam & Co., Shipowners, (signed) *G. J. Swanston.*
Aberdeen.

— No. 158. —

(M. 7124.)

Mr. *C. Smith* to Board of Trade.

"*Hilda*" Steamship.

Middlesborough-on-Tees,

Sir, 8 May 1875.

Your official notices* of 8th April and 6th instant have just been handed to me.

I beg to inform you with regard to the first-named, that on leaving this port for

* This refers to the ordinary Circular. *See* Appendix (B.).

for Dantzig I had a clear side of 2 ft. 5 in., and when so trimmed I consider the ship fit for any weather or voyage.

With regard to the second, the vessel was loaded in a tidal harbour, and when aground it is impossible to say whether the vessel will be exactly upright when afloat; the small list you name I consider made no difference; the ship was perfectly seaworthy.

Yours, &c.

Thos. Gray, Esq. (signed) *Charles Smith.*

— No. 159. —

(M. 5540.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,

Sir, 10 April 1875.

The "Records of Draught of Water" of the 7th and 8th instant, just received, appear to furnish some cases of overloading, to which I venture to direct your attention. Thus, on the 3rd instant, the "*Ennismore*" sailed from Glasgow, for Dublin, deeply laden; the "*Rose Middleton*" left Middlesborough on the 6th, with pig iron, for Stettin, having a clear side of only 1 ft. 9 in. to a depth of hold of 16 ft. 1-10th; and, on the following day, the "*Glenmanna*" left North Shields "deep." On the 7th, also, the "*Congou*" left Sunderland, for Jamaica, with a bad list, whilst on the previous day the "*Volante*" sailed from Hull, for Revel ("Reval" in the "Record"), deeply laden. It is to be observed that colliers are the greatest offenders in the matter of overloading, though, as a rule, they are probably the least able to pass the limits of safety.

I am, &c.

(signed) *Samuel Plimsoll,*

per *Chas. P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 160. —

(M. 5649.)

Messrs. *Middleton* & *Co.* to Board of Trade.

Steamship "*Rose Middleton*."

Sir, West Hartlepool, 12 April 1875.

We are in receipt of your favour* of the 10th instant, informing us that this vessel, when leaving Middlesborough for Stettin on the 6th instant, had a clear side of only 1 foot 9 inches. This is a mistake, as our captain, writing after the vessel was fully loaded, and just before sailing, quoted "freeboard 2 feet."

The vessel was loaded under the superintendence of the captain, a very experienced and careful man, who had strict orders from us not to overload the ship.

We have the testimony of the builder, and also of his manager, that 2 feet freeboard is ample for a boat of the "*Rose Middleton's*" dimensions and sheer.

We

* This refers to the ordinary Circular. *See* Appendix (B).

We need only add that the vessel arrived at Swinemünde yesterday forenoon, after a safe and quick passage.

We are, &c.
(signed) *Middleton & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 161. —

(M. 5860.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Overloading.

Sir, 4, Victoria-street, S.W., 15 April 1875.

THE "Record of Draught of Water" of the 9th instant appears to furnish two cases of overloading, namely, the "*Ardeer*," which sailed from Ardrossan on the 7th instant, and the "*Juliet Daniel*," which left Swansea on the following day. The "Record" of the 10th instant supplies some other cases. Thus, on the previous day, the "*Andalusia*" sailed from Middlesborough "deep;" the "*Azorian*" left North Shields "deep," and with a list; the "*Solway*" sailed from the same port "deep," and with a list of 22 inches, coal laden for Athens; and the "*Ernest*" "deep," and with a list of 14 inches. The "Record" of the 12th instant shows that on the 9th, the "*Agnes Wyllie*" left Middlesborough "deep," and that the "*Chatsworth*" sailed from North Shields for Alexandria in similar condition on the 10th.

I am, &c.
(signed) *Samuel Plimsoll*,
per *Charles P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 162. —

(M. 5977.)

Mr. *John Craig* to Board of Trade.

Draught of Water.

Merry & Cuninghame, Limited (John Craig, Agent),
Sir, Ardrossan, 17 April 1875.

I AM in receipt of your letter* of the 15th instant to Merry & Cuninghame, 127, St. Vincent-street, Glasgow, regarding the draught of steamship "*Ardeer*." In reply, I beg to refer you to my letters of 22nd December and 7th January last, the latter in answer to your M. 17,208—74 of 5th January. If the explanations given in these former communications are not deemed satisfactory, I shall be glad to meet your surveyor with the view of coming to an arrangement as to what the draught should be.

I am, &c.
(signed) *John Craig*.

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B).

— No. 163. —

(M. 17,208.)

Mr. *John Craig* to Board of Trade.

Draught of Water—Steamship "*Ardeer*."

Sir, Ardrossan, 22 December 1874.

In answer to your communication of 18th instant, addressed to Mr. Cuninghame, 127, St. Vincent-street, Glasgow, I am directed by him to state that this vessel is regularly employed in short voyages, and that she has loaded another cargo here since the 12th instant, when she was loaded to a draft that satisfied your surveyor, viz., 20 inches of clear side amidships. This draft will be kept to in future during the winter months, and in the summer months what your surveyor wishes will be complied with.

I am, &c.
(signed) *John Craig.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 164. —

(M. 17,208—74.)

Board of Trade to Mr. *John Craig.*

Draught of Water.

Board of Trade, Whitehall Gardens,
Sir, 5 January 1875.

I am directed by the Board of Trade toacknowledge the receipt of your letter of the 22nd ultimo, relative to the loading of the steamship "*Ardeer*," and stating that on a recent occasion she was loaded to a clear side of 20 inches, to the satisfaction of one of this Board's surveyors, and in reply to inform you that the Board of Trade are not at present prepared to indicate any fixed freeboard for this vessel, but that they are of opinion that 20 inches is a very low side for the winter season.

I am, &c.
(signed) *Thomas Gray.*

John Craig, Esq., Shipowner,
Ardrossan.

— No. 165. —

(M. 399.)

Mr. *John Craig* to Board of Trade.

Draught of Water.

Sir, Ardrossan, 7 January 1875.

In reply to your M. 17,208—74 of 5th instant, relative to the loading of the steamship "*Ardeer*," I beg to state for your information that this vessel trades from here to ports in Lancashire, returning light, or occasionally with a cargo of coals *viâ* Belfast, and that she is not bound to sail at certain times and in all weathers. If this be taken into consideration, as also the shelter offered in Lamlash,

Lamlash, Loch Ryan, Belfast, Lough, and Ramsay Bay, in the event of bad weather being encountered, I think that the 20 inches of freeboard is a fair one.

I may also state that the master has no orders what quantity to put into the vessel, the understanding being that he should not go to sea with the vessel unless he considers her to be in a seaworthy condition in every respect.

I am, &c.
(signed) *John Craig*,
Agent for *Merry & Cuninghame*, Limited,
Owners of Steamship "*Ardeer*."

The Assistant Secretary,
Marine Department, Board of Trade.

— No 166. —

(M. 6449.)

Messrs. *Steel, Young & Co.* to Board of Trade.

27, Leadenhall-street, London,
Sir, 27 April 1875.

In reply to yours* of the 15th instant to our Mr. George Steel, West Hartlepool, we regret that your surveyor at North Shields should have had reason to complain of the overloading and trim of the steamship "*Solway*"; we shall endeavour to prevent anything of this kind occurring again. We have now telegraph news of her safe arrival at Athens, having made a fair average passage.

We are, &c.
The Assistant Secretary, (signed) *Steel, Young & Co.*
Marine Department, Board of Trade.

— No. 167. —

(M. 5928.)

Messrs. *Fenwick & Co.* to Board of Trade.

Abchurch Chambers, Abchurch-yard, E.C.,
Sir, 16 April 1875.

We beg to acknowledge the receipt of your letter* of the 15th instant, and in reply have to inform you that we are quite unaware of the steamer "*Ernest*" having left the Tyne with any list at all. It is certainly not the practice of the captain to load his vessel in that way. He is a man of very great experience, and has commanded steamers belonging to us for some years, and in all that time we have never known him to load a vessel improperly. However, we will make strict inquiries upon the subject when the vessel returns. The "*Ernest*" arrived in perfect safety at Travemunde on the 14th instant.

We are, &c.
(signed) For *Fenwick & Co.*,
E. W. Rowland.
The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 168. —

(M. 6019.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Overloading.

Sir, 4, Victoria-street, S.W., 17 April 1875.

As it is possible that I may move for our correspondence on the above subject, I beg to forward you a list of ships and steamers that appear to have been overloaded, according to data supplied by "Records of Draught of Water," from 8th July to 31st December 1874, the "Records" from the 13th to the 27th December, inclusive, being missing. But for circumstances beyond my control, the subject would have been dealt with, as previously, and as at present, *de die in diem*. A review of these "Records" suggests the impression that there are certain ports which have acquired an unenviable notoriety in the matter of overloading, and notably North Shields, Middlesborough, Cardiff, and Swansea. They further suggest that there are certain vessels which are habitually overladen, and the following may be cited as cases in point:—The "*Benton*," the "*Buitron*," the "*Agnes and Louisa*," the "*Agnes Wyllie*," the "*Charlaw*," the "*Carbon*," the "*Dione*," the "*Lady Downshire*," the "*Huntcliffe*," the "*Jubilee*," the "*Lady Derby*," the "*King Coal*," the "*Thomas Vaughan*," the "*Vindamora*," the "*Ironopolis*," and the "*William Dawson*." It is very possible, I admit, that some of these vessels may, from their construction, possess elements of safety which would free them from the charge of being overladen. I can only deal, however, with the figures shown in the "Records," which do not indicate peculiarities of construction, though I venture to think that it would add greatly to their value if they afforded that additional information.

I am, &c.
(signed) *Samuel Plimsoll*,
per *Chas. P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

Enclosure in No. 168.

OVERLOADING.

Date of "Record."	Date of Sailing.	Port of Departure.	Name of Vessel.	Remarks.
1874:	1874:			
8 July	6 July	North Shields	Benton	"Deep."
8 „	6 „	ditto	John Straker	"Very deep"; bad list; bound for Port Said.
8 „	6 „	ditto	Temon	"Deep."
9 „	8 „	Cardiff	Ventnor	"Very deep."
9 „	7 „	North Shields	Amble	"Dangerously deep"; coal-laden for Stettin.
9 „	7 „	ditto	Vindomora	Idem; coal-laden for Swinemunde.
9 „	8 „	Swansea	Feronia	"Very deep."
9 „	8 „	ditto	Mauritius	Idem.
10 „	9 „	Sunderland	Oak	Idem.
10 „	9 „	ditto	Joseph Somes	Idem.
10 „	8 „	North Shields	Carbon	"Deep."
10 „	8 „	Ardrossan	Marco Polo	Idem.
11 „	10 „	Cardiff	Tamaulipas	"Very deep"; coal-laden for Oporto.
11 „	10 „	North Shields	Charles Tennant	"Dangerously deep"; coal-laden for Seville.
11 „	10 „	Swansea	Earl of Leicester	Idem.
13 „	11 „	North Shields	Venetia	"Deep."
14 „	13 „	Hull	Thomas Adam	"Very deep."
15 „	14 „	West Hartlepool	Lizzie English	Idem; coal-laden for Galatz.

Overloading—*continued.*

Date of "Record."	Date of Sailing.	Port of Departure.	Name of Vessel.	Remarks.
1874:	1874:			
15 July -	14 July -	Swansea - -	Zingra - -	"Very deep;" bound for Halifax, Nova Scotia.
16 „ -	15 „ -	Middlesborough	James Shaw -	"Deep."
16 „ -	15 „ -	Sunderland -	Ayton - - -	"Very deep."
17 „ -	16 „ -	North Shields -	Criterion - -	Idem.
18 „ -	16 „ -	Cardiff - -	Lord Bute - -	Idem; coal-laden for Lisbon.
18 „ -	16 „ -	Middlesborough	Huntcliffe - -	Idem.
18 „ -	17 „ -	- ditto - -	William Dawson -	Idem.
20 „ -	17 „ -	Ardrossan -	Matilda - -	Idem.
20 „ -	18 „ -	Leith - -	Edina - - -	"Deep."
22 „ -	21 „ -	Sunderland -	Speed - - -	Idem.
23 „ -	22 „ -	Cardiff - -	Marion - -	"Very deep"; bad list; bound for Malta.
23 „ -	22 „ -	- ditto - -	Douglas - -	Idem; bound for Barcelona.
23 „ -	22 „ -	- ditto - -	Pickwick - -	Idem; bound for Brindisi.
23 „ -	22 „ -	- ditto - -	Leckwith - -	"Deep."
25 „ -	23 „ -	- ditto - -	Rainton - -	"Very deep"; coal-laden for Port Said.
25 „ -	23 „ -	- ditto - -	Virginia Schilizzi	Idem; coal-laden for Suez.
25 „ -	23 „ -	- ditto - -	John Byng - -	"Deep"; coal-laden for Gibraltar.
27 „ -	25 „ -	Middlesborough	Malaga - -	Idem.
27 „ -	24 „ -	North Shields -	Sydenham - -	Idem; with coal for Genoa.
27 „ -	24 „ -	- ditto - -	Elf - - -	"Very deep."
27 „ -	25 „ -	- ditto - -	Carbon - -	Idem.
27 „ -	25 „ -	Sunderland -	Mount Stewart -	"Deep"; with a list.
29 „ -	28 „ -	Swansea - -	Ellen Catherine -	Idem; bound for Smyrna.
30 „ -	28 „ -	Cardiff - -	A. D. Gilbert -	Idem; with coals for Patras.
30 „ -	28 „ -	- ditto - -	Richmond - -	Sailed for Leghorn with a very bad list.
30 „ -	29 „ -	North Shields -	Dee - - -	"Deep."
31 „ -	29 „ -	Cardiff - -	Esk - - -	"Very deep."
31 „ -	29 „ -	- ditto - -	Bromsgrove -	"Deep."
31 „ -	28 „ -	North Shields -	Glenmanna - -	Sailed with a bad list; date of sailing given as 18th July in "Record."
31 „ -	28 „ -	- ditto - -	Charlaw - -	"Very deep."
1 August	31 „ -	Cardiff - -	Henry Bolckow -	"Deep."
1 „ -	31 „ -	Leith - -	Kinghorn - -	Idem.
2 „ -	1 Aug. -	Ardrossan -	Eclipse - -	Idem.
6 „ -	4 „ -	North Shields -	Harvest Queen -	Idem.
6 „ -	5 „ -	Sunderland -	Harry Clem -	Idem.
7 „ -	5 „ -	Cardiff - -	Glamorgan - -	According to "Record," sailed with a most dangerous list. There must be a mistake.
7 „ -	6 „ -	- ditto - -	Hannah Douglas -	Sailed "deep," for Tarragona.
7 „ -	6 „ -	- ditto - -	Charles Mitchell -	"Deep"; bad list.
7 „ -	6 „ -	Swansea - -	Mauritius - -	"Deep."
8 „ -	7 „ -	Cardiff - -	Benita - -	Sailed "deep," for Seville.
8 „ -	7 „ -	- ditto - -	Llandaff - -	"Dangerously deep"; bad list.
8 „ -	6 „ -	Newport - -	Lady Maxwell -	"Very deep."
8 „ -	6 „ -	- ditto - -	Foyle - - -	Idem.
8 „ -	6 „ -	North Shields -	Ethel - - -	Sailed "deep"; coal-laden, for Barcelona.
8 „ -	6 „ -	- ditto - -	Carbon - -	"Very deep."
10 „ -	7 „ -	Plymouth -	Ann Williams -	"Deep."
10 „ -	7 „ -	North Shields -	Charlaw - - -	"Very deep."
10 „ -	7 „ -	- ditto - -	City of Exeter -	Idem; with a list; for Constantinople.
10 „ -	7 „ -	- ditto - -	Sovereign - -	"Deep."
10 „ -	7 „ -	- ditto - -	Benton - -	Idem.
10 „ -	8 „ -	- ditto - -	Lurline - -	Idem; with a list.
10 „ -	8 „ -	- ditto - -	Head Quarters -	"Very deep"; for Galatz.
10 „ -	8 „ -	- ditto - -	Vindamora - -	"Deep."
11 „ -	8 „ -	Cardiff - -	Corisande - -	Idem.
12 „ -	10 „ -	Hull - -	Bonnie Kate -	"Very deep."
12 „ -	11 „ -	- ditto - -	Forest Queen -	"Deep."
12 „ -	11 „ -	Leith - -	Gladys - -	Idem.
13 „ -	11 „ -	North Shields -	Dione - - -	Idem.
13 „ -	11 „ -	- ditto - -	Jubilee - -	Idem.
13 „ -	12 „ -	- ditto - -	Anglo Saxon -	Idem.
13 „ -	11 „ -	Sunderland -	Henry Brand -	Idem.

Overloading—*continued.*

Date of "Record."	Date of Sailing.	Port of Departure.	Name of Vessel.	Remarks.
1874:	1874:			
15 August	14 Aug.	Leith - -	Osborne - -	"Deep."
15 „ -	13 „ -	Middlesborough	Bessemer - -	Idem.
17 „ -	14 „ -	Ardrossan -	Petrel - - -	Idem.
17 „ -	14 „ -	North Shields -	Sarah Ann - -	"Very deep."
17 „ -	15 „ -	- ditto - -	John Middleton -	Idem; for Barcelona.
17 „ -	15 „ -	- ditto - -	Martin Wiener -	"Deep."
18 „ -	17 „ -	- ditto - -	Carbon - -	"Very deep"; clear side, 2 feet 8 inches; depth of hold, 19 feet 1-10th.
19 „ -	17 „ -	Leith - -	Vale of Calder -	Idem.
20 „ -	18 „ -	Ardrossan -	Comet - - -	Idem.
20 „ -	19 „ -	Middlesborough	William Dawson -	Idem.
21 „ -	19 „ -	Hull - -	Quito - - -	"Deep."
21 „ -	19 „ -	Sunderland -	Londonderry -	Idem.
21 „ -	19 „ -	- ditto - -	Alert - - -	The tonnage of this vessel is given in "Record" as 9,722!
22 „ -	20 „ -	North Shields -	Bebside - -	"Very deep."
22 „ -	21 „ -	Liverpool -	Zembra - -	"Deep."
24 „ -	22 „ -	Middlesborough	Glencoe - -	"Very deep."
24 „ -	21 „ -	North Shields -	Benton - -	Idem.
24 „ -	21 „ -	- ditto - -	Lottie - - -	"Deep."
24 „ -	21 „ -	Sunderland -	Active - -	Idem; with a list.
24 „ -	21 „ -	- ditto - -	Earl of Durham -	Idem.
25 „ -	22 „ -	North Shields -	Charlaw - -	"Very deep"; bad list.
25 „ -	22 „ -	- ditto - -	Northumbria -	Idem.
26 „ -	22 „ -	- ditto - -	Mary Driver -	"Deep."
26 „ -	24 „ -	- ditto - -	Bamborough -	Sailed for Cronstadt with a very bad list.
26 „ -	24 „ -	- ditto - -	Carbon - -	"Very deep"; seems always overloaded.
27 „ -	26 „ -	Glasgow - -	Arbutus - -	Sailed with a bad list.
27 „ -	27 „ -	Middlesborough	William Dawson -	"Very deep"; bad list; appears generally to be overloaded.
28 „ -	26 „ -	Ardrossan -	Morning Light -	"Deep."
28 „ -	27 „ -	East Hartlepool	Una - - -	Idem.
28 „ -	27 „ -	North Shields -	Farnley Hall -	"Very deep"; for Savona; list of 17 inches.
29 „ -	28 „ -	Middlesborough	Agnes Wyllie -	Idem; iron and coke for Bergen.
29 „ -	28 „ -	North Shields -	Charlaw - -	"Deep"; seems to be habitually overladen.
29 „ -	28 „ -	- ditto - -	Celsus - - -	Idem; for Galatz.
29 „ -	28 „ -	- ditto - -	F. T. Barry - -	Sailed with a bad list for Gibraltar.
31 „ -	29 „ -	- ditto - -	Lufra - - -	A list of 4 feet 6 inches is here indicated.
31 „ -	29 „ -	- ditto - -	Sylph - - -	"Deep."
31 „ -	29 „ -	- ditto - -	Bothnia - -	"Very deep"; for Marseilles.
3 Sept. -	1 Sept.	- ditto - -	Waldridge - -	Bad list.
3 „ -	2 „ -	Sunderland -	Bromsgrove -	"Very deep."
4 „ -	2 „ -	North Shields -	Ulleswater - -	"Deep"; bad list; bound for Naples.
4 „ -	2 „ -	- ditto - -	Dora - - -	"Deep"; with a list.
5 „ -	3 „ -	Belfast - -	Llewellyn - -	Idem; deep by stern.
5 „ -	4 „ -	Middlesborough	Edgworth - -	"Very deep"; iron-laden for Stettin.
5 „ -	4 „ -	North Shields -	Serantes - -	Idem.
5 „ -	4 „ -	- ditto - -	Rifleman - -	"Deep,"
7 „ -	4 „ -	Cardiff - -	Ouse - - -	"Very deep."
7 „ -	4 „ -	North Shields -	Buitron - -	Idem; coal-laden for Genoa.
7 „ -	4 „ -	- ditto - -	Filey - - -	"Deep"; coal-laden for Malta.
7 „ -	5 „ -	Seaham - -	Garibaldi - -	"Very deep."
8 „ -	7 „ -	Middlesborough	Huntcliff - -	Idem; an old offender.
9 „ -	8 „ -	Sunderland -	Ayton - - -	Idem.
9 „ -	8 „ -	Cardiff - -	Hero - - -	"Deep"; with a bad list.
9 „ -	8 „ -	- ditto - -	Carbon - -	"Very deep."
10 „ -	8 „ -	Sunderland -	James Harris -	Idem.
10 „ -	9 „ -	Glasgow - -	Jeesie Osborne -	Sailed for Rangoon, with a list of 30 inches.
11 „ -	9 „ -	Cardiff - -	Ann Lovitt - -	"Deep."
11 „ -	10 „ -	North Shields -	Ben Lomond -	"Very deep"; bound for Savona.

Overloading—*continued.*

Date of "Record."	Date of Sailing.	Port of Departure.	Name of Vessel.	Remarks.
1874:	1874:			
11 Sept.	10 Sept.	North Shields	Martin Wiener	"Deep."
11 „	10 „	Sunderland	Ethel	"Very deep."
12 „	11 „	Glasgow	Fortuna	"Deep"; with a bad list; bound for Cadiz.
12 „	11 „	Leith	Kinghorn	"Deep."
12 „	10 „	Middlesborough	Charlton	Idem; bad list.
12 „	11 „	Whitehaven	Lady Downshire	Idem.
14 „	12 „	Middlesborough	Fulmar	Idem.
14 „	11 „	North Shields	Said	"Very deep"; bad list; for Barcelona.
14 „	12 „	Hull	Hilda	Idem.
16 „	15 „	Cardiff	Leader	"Deep"; bound for Lisbon.
16 „	14 „	North Shields	Peter	Idem.
17 „	16 „	Cardiff	Sir Bevis	Idem.
17 „	15 „	North Shields	King Coal	Idem.
17 „	15 „	- ditto	Snowdrop	Idem.
17 „	15 „	- ditto	Agnes and Louisa	Idem.
17 „	15 „	- ditto	Jubilee	"Very deep"; old offender.
17 „	16 „	- ditto	Benton	"Deep"; with a list; an old offender.
17 „	16 „	Glasgow	Ennismore	Idem.
17 „	16 „	Middlesborough	Thomas Vaughan	"Very deep."
17 „	16 „	- ditto	Huntcliffe	Idem.
19 „	17 „	North Shields	Charlaw	"Deep"; with a list.
19 „	17 „	- ditto	Timon	Idem.
19 „	18 „	Sunderland	Earl of Durham	Idem.
21 „	17 „	Ardrossan	St. Mungo	Idem.
21 „	18 „	North Shields	Carbon	"Very deep."
21 „	18 „	- ditto	Alice Otto	Idem; bound for Genoa.
21 „	19 „	Hull	Cossack	Idem.
21 „	19 „	North Shields	Sir Henry Havelock	"Deep."
22 „	18 „	Liverpool	John Straker	"Very deep"; for the Levant.
23 „	22 „	Cardiff	Edward Eccles	Idem.
23 „	22 „	- ditto	Corisande	"Deep"; for Barcelona.
23 „	22 „	- ditto	Llandaff	"Very deep."
24 „	23 „	Middlesborough	Sixty-six	Idem.
24 „	23 „	- ditto	Lady Derby	Idem.
24 „	23 „	- ditto	Huntcliffe	"Deep."
24 „	23 „	North Shields	Camerata	Idem.
24 „	23 „	- ditto	King Coal	Idem.
25 „	24 „	Sunderland	Terlings	Idem.
26 „	25 „	Cardiff	Cæsarea*	"Very deep"; iron cargo; Malta.
26 „	25 „	Glasgow	Symmetry	Idem; bound for Corunna.
26 „	25 „	Middlesborough	Erimus	Idem.
28 „	26 „	Cardiff	Cæsarea*	Idem.
28 „	26 „	Hull	Essex	Idem.
28 „	25 „	North Shields	Harrington	Idem; with a list.
28 „	26 „	- ditto	Alfgar	Idem; a list of 18 inches.
28 „	26 „	- ditto	Carbon	Idem.
28 „	26 „	Swansea	Isaac Pinnock	Idem.
2 Oct.	1 Oct.	North Shields	George Locket	Idem.
30 Sept.	29 Sept.	- ditto	Benton	"Deep."
1 Oct.	29 „	Cardiff	Windermere	"Very deep."
1 „	30 „	North Shields	Charlaw	"Deep."
3 „	2 Oct.	Cardiff	Apollo	"Very deep"; bad list; for Gibraltar.
5 „	3 „	- ditto	Caen	"Dangerously deep"; with a list.
5 „	2 „	Middlesborough	Ironopolis	"Very deep."
5 „	3 „	North Shields	Geraldine	Sailed for Guadeloupe, with a bad list.
5 „	3 „	- ditto	Hawthorns	Sailed with a list of 10 inches.
6 „	4 „	Swansea	Shark	"Deep."
8 „	7 „	Middlesborough	Glenmore	"Very deep"; iron cargo.
8 „	7 „	North Shields	Lottie	Idem; with a bad list; for Genoa.
8 „	7 „	- ditto	Unity	Idem; bound for Brindisi.
9 „	7 „	- ditto	Despatch	"Deep"; destination, Alexandria.
10 „	7 „	Ardrossan	Little Harry	Idem.
10 „	9 „	Newport	Sheldrake	"Very deep."

Overloading—*continued.*

Date of "Record."	Date of Sailing.	Port of Departure.	Name of Vessel.	Remarks.
1874:	1874:			
13 Oct.	12 Oct.	Cardiff	Imbro	"Very deep"; list of 22 inches; for Port Said.
13 „	12 „	ditto	Hampshire	"Deep."
14 „	13 „	North Shields	Mary Lester	"Very deep"; for Algiers.
14 „	13 „	ditto	Rayner	Idem; destination, Civita Vecchia.
16 „	15 „	Cardiff	Barrasford	"Deep"; iron cargo.
16 „	15 „	ditto	Tinto	"Very deep"; for Gibraltar.
17 „	16 „	Middlesborough	Huntcliff	Idem.
19 „	16 „	Cardiff	John Williamson	Idem.
19 „	17 „	North Shields	Fenham	Idem.
21 „	20 „	Glasgow	Arbutus	"Deep"; list.
22 „	20 „	North Shields	King Leopold	Idem.
23 „	21 „	Greenock	Xantippe	Idem.
24 „	23 „	Swansea	Thames	Idem.
24 „	23 „	ditto	C. A.	Idem.
26 „	23 „	Leith	Osborne	"Very deep."
26 „	24 „	Middlesborough	Sumus	"Deep"; iron cargo.
26 „	24 „	Swansea	Julius Cæsar	Idem.
26 „	24 „	ditto	Agnes Jack	"Very deep."
27 „	26 „	Cardiff	Clifton	"Deep."
28 „	26 „	North Shields	Samuel Laing	Idem.
28 „	27 „	Swansea	Selwyn	Idem; bound, coal-laden, for Buenos Ayres.
29 „	27 „	Hull	Hilda	Idem.
29 „	28 „	North Shields	Prudhoe Castle	Sailed with a list of 2 ft. 9 in.
29 „	28 „	ditto	John O. Scott	"Very deep."
30 „	27 „	Cardiff	Ems	Idem.
30 „	29 „	West Hartlepool	Gipsy Queen	"Deep."
2 Nov.	31 „	North Shields	Cleanthes	Idem; bound for Barcelona.
2 „	31 „	ditto	Chipchase	Idem.
4 „	3 Nov.	Sunderland	Mercator	"Very deep"; destination, Malta.
4 „	3 „	ditto	Pyrrha	Idem.
5 „	4 „	North Shields	Jubilee	Idem.
6 „	5 „	Middlesborough	Thomas Vaughan	"Deep."
7 „	6 „	Leith	Kinghorn	Idem.
7 „	5 „	Cardiff	J. E. M'Connell	"Very deep"; for Civita Vecchia.
9 „	7 „	North Shields	Buitron*	Idem; bad list; for Barcelona.
9 „	7 „	Middlesborough	Genoa	"Deep."
10 „	9 „	Cardiff	Amcott	"Very deep"; bound for Leghorn.
10 „	9 „	Middlesborough	Agnes Wyllie	"Deep."
10 „	9 „	Swansea	Norwood	Idem; for Marseilles.
11 „	10 „	Glasgow	Rover	Idem.
11 „	10 „	ditto	Minerva	Idem; with a list.
11 „	9 „	Greenock	Annie	Idem.
11 „	9 „	North Shields	Buitron*	"Very deep"; for Barcelona.
11 „	10 „	ditto	Long Ditton	Idem.
11 „	10 „	ditto	Progress	"Deep."
11 „	11 „	Glasgow	Sidonian	"Very deep"; list; for Lisbon.
12 „	11 „	Swansea	Marie Ange	"Deep."
13 „	12 „	Cardiff	Esk	"Very deep"; cargo, iron.
13 „	12 „	Middlesborough	Fitzwilliam	"Deep."
13 „	12 „	ditto	J. J.	Idem.
13 „	12 „	ditto	Erimus	Idem.
13 „	12 „	ditto	Sumus	Idem.
13 „	12 „	ditto	Huntcliff	Idem.
14 „	13 „	Cardiff	Ruby	Idem.
14 „	13 „	ditto	James Groves	Idem.
14 „	13 „	Glasgow	Lady Downshire	Idem; a list of 10 inches.
14 „	13 „	Swansea	Camel	"Very deep."
16 „	14 „	Hull	Trafalgar	"Deep."
16 „	14 „	Swansea	Sybil Wynn	Idem.
16 „	14 „	ditto	Water Lily	Idem.
17 „	16 „	Middlesborough	Perseverance	Idem.
18 „	14 „	Leith	North Star	Idem.
19 „	18 „	Cardiff*	Trafalgar	"Very deep"; for Corfu.
19 „	18 „	ditto	Glendale	Idem; for Malta.
20 „	19 „	ditto*	Trafalgar	Idem. *See* "Record," 19th.

Overloading—*continued.*

Date of "Record."	Date of Sailing.	Port of Departure.	Name of Vessel.	Remarks.
1874:	1874:			
21 Nov.	20 Nov.	Cardiff	John Boyle	"Very deep."
21 „	20 „	- ditto	Sunniside	Idem.
21 „	20 „	- ditto	Joseph Love	Idem.
25 „	24 „	Middlesborough	Huntcliff	Idem.
25 „	23 „	Ardrossan	Camel	Idem; clear side of 6 inches; only cargo, iron.
26 „	24 „	North Shields	Stagshaw	Sailed "deep."
27 „	26 „	Cardiff	Celsus	"Very deep"; with a list; for Messina.
4 Dec.	3 Dec.	Glasgow	Dorian	"Deep"; with a list of 12 in.
5 „	3 „	North Shields	Fenham	"Very deep"; coal-laden for the Baltic.
5 „	3 „	- ditto	Emerald	"Deep."
5 „	3 „	- ditto	John and Edwin	Idem.
7 „	5 „	Cardiff	Alert	"Very deep."
7 „	5 „	London	Maharajah	Idem; with coals for Constantinople; a list of 12 inches.
10 „	9 „	North Shields	Northumbria	Idem.
10 „	9 „	- ditto	Dora	"Deep."
10 „	9 „	- ditto	Martino Maria	Idem; with bricks and coals for Savona.
10 „	9 „	Cardiff	Thornaby	"Very deep." This vessel was lost.
10 „	9 „	East Hartlepool	Ludworth	"Deep."
10 „	8 „	Hull	West Riding	Idem.
11 „	9 „	Greenock	Koodoo	Idem.
11 „	10 „	Middlesborough	Huntcliff	"Very deep"
11 „	10 „	- ditto	Louise of Lorne	Idem — all laden with iron.
11 „	10 „	- ditto	Sumus	Idem —
11 „	10 „	- ditto	Fitzwilliam	Idem —
12 „	10 „	London	Doretta	"Deep"; bound for the Cape.

"Records" of the 13th to the 27th December, inclusive, Missing.

1874:	1874:			
28 Dec.	23 Dec.	Ardrossan	Glengarlock	"Very deep"; cargo, iron.
28 „	26 „	- ditto	Arden	"Deep"; cargo, iron.
28 „	26 „	Middlesborough	Ironopolis	Idem.
28 „	24 „	North Shields	Josephine	"Very deep."
28 „	24 „	- ditto	Wave	"Deep."
29 „	27 „	- ditto	Margaret	Sailed with a list of 21 inches.
29 „	27 „	- ditto	Anne Holland	"Very deep."
1875:				
1 Jan.	30 „	Hull	Pioneer	This vessel sailed 4 feet 3 inches deep by the stern.

— No. 169. —

(M. 10,247.)

Mr. *J. L. Hill* to Board of Trade.

Sir, Southampton, 16 July 1874.

Yours, dated the 13th instant,* duly reached me, and I beg to say that the steamship "*Ventnor*" reached Hamburg after an unusually quick passage, delivered her cargo, and left again for Sunderland on the 14th instant. I consider, from the construction of our steamers, that they are perfectly safe during the summer months with a freeboard of 1½ inch to the depth of hold, and in winter 2 inches

* This refers to the ordinary Circular. *See* Appendix (B.).

2 inches. All our steamers have water-ballast tanks extending right fore and aft, capable of holding 200 tons of water, and which, when displaced with air, gives them very great additional buoyancy, compared to boats not having such tanks. I again repeat what I have stated before, and that is, after being ship-owners for upwards of 25 years, we have been almost entirely free from any loss by storm and tempest.

Yours, &c.
(signed) *Jas. L. Hill.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 170. —

(M. 10,230.)

Messrs. *Bell & Symonds* to Board of Trade.

Lombard-street, Newcastle-on Tyne,
16 July 1874.

Sir,

We are favoured with yours of the 13th instant* respecting the loading of our steamship "*Vindomora*" with coals from the Tyne to Swinemunde. With reference to the difference between the two clear sides, 2 feet 4½ inches by 1 foot 9 inches, we are of opinion that she never had such a list, and after she was unmoored and decks stowed up, mooring chains put away, and bilges pumped out, the list was barely perceptible. Whatever list there might have been is accounted for by the bunkers being only partly filled, and more coals were put into port bunker than starboard; this, however, would be rectified soon after being at sea, by using her coals from the port side. We do not consider the ship to have been deeply laden, and, in fact, had all the appearance of being in good trim and presenting bold ends.

We must, however, inform you that the "*Vindomora*" possesses a very great sheer, which makes her appear low amidships, while the two ends are prominently out of the water.

Captain G. W. Ward, who has been master of her from being built, pronounces her to be a first-class sea boat, and perfectly seaworthy, even if deeper laden than on leaving the Tyne. She has made her passage to Swinemunde all well and in satisfactory time.

We remain, &c.
(signed) *Bell & Symonds.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 171. —

(M. 10,233.)

Mr. *T. S. Begbie* to Board of Trade.

36, Walbrook, London, E.C.,
15 July 1874.

Dear Sir,

Yours of the 13th instant,* addressed to Mr. Batters, has been sent to me, the management of his steamers being in my hands.

In reply to your request to know how the ship performed the voyage referred to in your letter, I have to inform you that she performed it without any complaint whatever being made of discomfort, or any intimation whatever from the captain or the crew that the vessel was deeply laden.

I think, from your having addressed one or two letters before in reference to this boat, that you cannot be aware of the fact that she has a very long poop, that runs quite into the waist of the vessel, thus giving her a very large reserve of buoyancy.

Yours, &c.
(signed) *E. F. Paddon*, Superintendent,
For *T. S. Begbie.*

To the Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 172. —

(M. 10,299.)

Messrs. *Browne, Atkinson & Co.* to Board of Trade.

Sir, Hull, 17 July 1874.

We have this morning received your circular favour of the 15th instant,* and in reply to the contents, the "*Joseph Somes*" steamship arrived at Cronstadt yesterday.

This boat has always loaded down to the draught you name, with a dead-weight cargo, and has always performed her passages well.

During eleven years past she has only called once upon underwriters, viz., six months ago, through grounding on Gothland in a fog.

We are, &c.

The Assistant Secretary, (signed) *Browne, Atkinson & Co.*
Marine Department, Board of Trade.

— No. 173. —

(M. 10,301.)

Mr. *George Hedley* to Board of Trade.

Holmside and South Moor Collieries Office,
Sir, Newcastle-on-Tyne, 17 July 1874.

In reply to your letter of the 15th instant,* in regard to the steamship "*Carbon*" having sailed from Shields on the 8th instant to all appearance deeply laden, I have only to say, as before, that it is due to the build of the vessel.

The steamer performed the voyage very satisfactorily, and sails to-day for London after loading again in the Tyne.

I refer you to my letters of 26th July 1873 and 8th June of this year.†

I am, &c.

The Assistant Secreary, (signed) Per *Geo. Hedley*,
Marine Department, Board of Trade. *M. Archer.*

— No. 174. —

(M. 10,337.)

Messrs. *J. Stephens & Co.* to Board of Trade.

3, Burgh Quay, Carlisle Bridge, Dublin,
Sir, 17 July 1874.

Referring to your favour of the 15th,* we beg to inform you that the steamer "*Tamaulipas*" sailed from Cardiff with but 551 tons, inclusive of bunker coal. She but one month ago returned from Santander with 600 tons, and was therefore 49 tons short of complete cargo this voyage.

She made the run out entirely to her captain's satisfaction, and judging from her previous cargoes, we are quite correct in stating that she was by no means deeply laden.

We are, &c.

(signed) Per *John Stephens & Co.*,
A. C.

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).
† *See* p. 149, Parliamentary Paper, 394, of 1874.

— No. 175. —

(M. 10,300.)

Mr. *H. Bee* to Board of Trade.

Sutherland House, Cumberland-place,
Dear Sir, Southampton, 17 July 1874.

I RECEIVED your statement this morning, M. (—)*

The "*Earl of Leicester*" left Swansea on the 10th instant, and arrived at this port yesterday, being at sea five clear days.

As I received your statement previous to the vessel starting to discharge, I had her freeboard measured on each side, and give the *bonâ fide* freeboard; on the starboard side 2 feet 8 inches, on the port 2 feet 6¾ inches, being about a foot more on each side than that quoted in your statement. Last voyage the vessel had 309 tons of coals on board from Swansea, and this voyage 308 tons, and with this freeboard I find her (from my captain) to behave well at sea, and fit for any weather.

I am, &c.
The Assistant Secretary, (signed) *Hy. Bee.*
Marine Department, Board of Trade.

— No. 176. —

(M. 11,494.)

Messrs. *Massey & Sawyer* to Board of Trade.

Reval, Helsingfors, and Abo Steam Navigation Offices,
Sir, Hull, 18 August 1874.

As representing Mr. John B. Adam, shipowner, Aberdeen, and in reply to your communication of the 17th ultimo*, we have to give you the following reply:

That the "*Thomas Adam*" steamship was 100 tons short of her carrying capacity, which we can certainly prove, and we also beg to submit that the surveyor surveyed the ship before she was properly trimmed, as there was a quantity of water in the after tank at the time, which the mate omitted to mention to the surveyor.

The "*Thomas Adam*" made the voyage upon which she was bound at the time, viz., from Hull to Reval, in under six days.

We are, &c.
The Assistant Secretary, (signed) *Massey & Sawyer.*
Marine Department, Board of Trade.

— No. 177. —

(M. 11,457.)

Messrs. *George Pyman & Co.* to Board of Trade.

Belgian Consulate, West Hartlepool,
Sir, 17 August 1874.

IN reply to your communication, dated 17th ultimo*, in reference to the steamship "*Lizzie English*" sailing from this on the 14th ultimo, with a clear side of 1 foot 11 inches, and bound to Galatz, we beg to inform you the vessel arrived safe and sound at her destination on the 5th instant, the master having no comment to make thereon whatever.

Our experience of this vessel is, that she is perfectly seaworthy in *all weather* when so, or even deeper laden than above named.

We are, &c.
Thomas Gray, Esq., (signed) Pro *George Pyman & Co.*,
Board of Trade, Whitehall Gardens. *W. G. P.*

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 178. —

(M. 11,457.)

Board of Trade to Messrs. *G. Pyman & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
22 August 1874.

Gentlemen,

I AM directed by the Board of Trade to acknowledge the receipt of your letter of the 17th instant, with reference to the draught of water of the steamship "*Lizzie English*" on her late voyage from Hartlepool to Galatz.

In reply, I am to request that you will be good enough to inform this department whether there is any speciality about the build or construction of the vessel in question, which leads you to form the opinion that she is "perfectly seaworthy in all weathers" when even more deeply laden than on the voyage referred to.

I am, &c.
(signed) *Henry G. Calcraft.*

Messrs. G. Pyman & Co.,
Belgian Consulate, West Hartlepool.

— No. 179. —

(M. 11,697.)

Messrs. *G. Pyman & Co.* to Board of Trade.

Belgian Consulate, West Hartlepool,
24 August 1874.

Sir,

WE have to acknowledge receipt of yours of 22nd instant in reference to the steamship "*Lizzie English*."

In reply, we beg to inform you this vessel has a very great sheer, decks a great crop, and combings of hatchways a great height.

By her sheer, she has capital ends, when to the eye, or even measurement *amidships*, she seems deeply laden. By crop of the deck she frees herself of water quickly, and height of combings protects hatchways.

Our overseer, Captain T. A. Pyman, commanded her for some considerable time, and many times has he crossed the North Sea during the winter months and experienced heavy gales, and heavier sea (Dogger Bank), with the vessel two inches deeper than she was on her late voyage hence to Galatz.

In conclusion, our overseer from actual experience has proved the vessel to be lively and safe as a lifeboat in all weathers, drawing 15 feet water.

Trusting this explanation will be satisfactory to your honourable Board,

We are, &c.
(signed) *George Pyman & Co.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 180. —

(M. 10,532.)

Mr. *John S. Barwick* to Board of Trade.

Sunderland, 23 July 1874.

Sir,

IN answer to your communication of yesterday,* I beg to say that in an ordinary way the steamship "*Ayton*" is a few inches less draught than she was when she left here on the 15th instant, but not much; she has always performed her voyages in safety, and came back from the voyage in question last night all right. I account for her loading deeper than steamers of her size usually do, from the fact of her having a very fine bottom, which causes her to be a nice stiff ship at sea, and not so crank as the usual class of steamers, which I consider is of greater consideration than her being a little deeper.

Yours, &c.
(signed) *John S. Barwick.*

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 181. —

(M. 10,534.)

Messrs. *Watts, Milburn & Co.* to Board of Trade.

Draught of Water.

Sir, Newcastle-on-Tyne, 23 July 1874.

In reply to your letter of yesterday,* we beg to say that the "*Criterion*" only sailed with the usual quantity of cargo in the summer time, and we are not apprehensive of any accident happening to her.

We are, &c.
(signed) Per *Watts, Milburn & Co.*,
Jas. S. Walton.

— No. 182. —

(M. 10,996.)

Messrs. *Pyman, Bell & Co.* to Board of Trade.

Dear Sir, Newcastle-on-Tyne, 3 August 1874.

Yours of 28th July* duly to hand. The "*Douglas*" arrived at Barcelona on the 31st July, all well. We do not think she was too deeply laden.

Yours, &c.
To the Assistant Secretary, (signed) *Pyman, Bell & Co.*
Marine Department, Board of Trade.

— No. 183. —

(M. 11,432.)

Mr. *George Bell* to Board of Trade.

Sir, North Shields, 17 August 1874.

I am in receipt of yours of the 28th ultimo,* informing me that the steamship "*Pickwick*" is reported as having sailed from Cardiff for Brindisi deeply laden, and in reply I beg to state that the captain of this vessel had the loading left entirely in his own hands, with instructions from me that the vessel had always to be in good trim, and which I suppose he considered the "*Pickwick*" to have been when she sailed from Cardiff. The vessel, you will be aware, would be several inches bolder after she got to sea, and with due deference to your surveyor, I beg to say that the "*Pickwick*" could not be considered deeply laden, even assuming the clear side (on leaving the dock) that he reports the vessel to have had to be correct. If the style of vessel is taken into consideration, she has a long full poop, and a great spring, which makes her always a bold ship, and I would suggest that your surveyors have instructions to take all these matters into consideration before reporting vessels deeply laden merely from the clear side, and without making proper allowance for the style, build, and general construction of the vessel.

The "*Pickwick*" arrived at Brindisi on the 3rd instant, having made a very quick passage, being only 12 days from Cardiff.

I am, &c.
The Assistant Secretary, (signed) *George Bell.*
Marine Department, Board of Trade.

I have been from home, or your letter would have been replied to sooner.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 184. —

(M. 10,753.)

Mr. *Charles E. Stallybrass* to Board of Trade.

Cardiff, 29 July 1874.

Sir,

I BEG to own receipt of your favour of yesterday,* and to inform you that the steamship "*Leckwith*" made a *very fast* passage to Greenock in perfect safety.

I am at a loss to understand where your informant got his information as to her having a starboard list of 6 inches, as she was perfectly upright leaving here. I fancy your informant may have been misled by a steamer lying alongside the "*Leckwith*" in the dock basin, which steamer did have a list to starboard.

With regard to your inquiry as to the usual draught of the steamer, I beg to say I do not restrict my captains to a load line; they load according to their discretion. The load draught of the "*Leckwith*" as laid and marked by builders is 15 feet 6 inches by 14 feet 6 inches, and she usually loads to about this draught; in winter a little less. On this voyage she was drawing in fresh water, 15 feet 8 inches by 14 feet 5 inches, about a half inch deeper than her marks.

I am, &c.

The Assistant Secretary, Board of Trade.

(signed) *Chas. E. Stallybrass.*

— No. 185. —

(M. 10,808.)

Mr. *H. Clarkson* to Board of Trade.

London, 30 July 1874.

Sir,

IN reply to your letter of 28th inst.,* with reference to the "*Virginia Schilizzi*" steamship, I beg to say that from the advices I have received from Cardiff, I have no reason to suppose that the vessel was deeply laden, especially as she had on board nearly 100 tons less than her usual cargo. The captain, who had commanded her from the day she was built, knows her capacity very much better than I can, and he has instructions always to keep her in safe trim. I presume in loading her he has had due regard to her great sheer, and the fact that the vessel is almost spar-decked.

I am, &c.

The Assistant Secretary, Marine Department, Board of Trade.

(signed) *H. Clarkson.*

— No. 186. —

(M. 11,189.)

Messrs. *Lofthouse, Glover & Co.* to Board of Trade.

Austrian Chambers, 27, Humber Dock-street,
Hull, 10 August 1874.

Sir,

WE are in receipt of your favour of the 7th instant,* and are surprised to learn that the "*Elf*" was deeply laden. This steamer left the Tyne on the 5th inst., and not the 24th ultimo, as stated; and so far as we know, was then only drawing 18 feet by 16 feet, a draught of water not unusual for this vessel, as Captain Watson would not have loaded her beyond her carrying capacity. In fact, we allow our captains every discretion in such matters, and our superintendent engineer, who saw her loaded, states that she had ample clear side for all purposes, and no list whatever. This is all we are in a position to state, of our own knowledge; but if you wish it, shall be glad to report her safe arrival at Cronstadt.

Yours, &c.

Mr. Thos. Gray, Board of Trade.

(signed) *Lofthouse, Glover & Co.*

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 187. —

(M. 11,221.)

Mr. *G. Hedley* to Board of Trade.

Holmside and South Moor Collieries Office,
Newcastle-on-Tyne, 11 August 1874.

Sir,

In reply to your letter of 7th inst.,* calling my attention to the depth of water drawn by steamship "*Carbon*" on the 25th ult., I can only refer you to my letter of the 26th July last year, and the 8th June and 17th July this year. She made the voyage you speak of in a very satisfactory manner, and has been a voyage to Hamburg since then.

I am, &c.
(signed) For *Geo. Hedley*,
M. Archer.

Thos. Gray, Esq.

— No. 188. —

(M. 11,195.)

Messrs. *W. Hill & Co.* to Board of Trade.

(Extract.)

Sir, Southampton, 10 August 1874.

* * * * * *

The "*Bromsgrove*" made a splendid run to Dieppe, arriving there on the 31st. I should consider her with a clear side of two feet, not deeply laden for the time of year. I consider the measurements taken at Cardiff are incorrect, insomuch that as all the vessels under my management trim by the stern 6 to 9 inches, and as the measurements are taken abaft the bridge, they naturally are more immersed there than in any other part of the vessel. Again, after getting clear of Penarth Roads, and into salt water, they lift from 4 to 6 inches.

Yours, &c.
(signed) Pro *Wm. Hill & Co.*,
Jas. L. Hill.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 189. —

(M. 11,340.)

Messrs. *Duncan, Mitchell & Co.* to Board of Trade.

Sir, Dundee, 13 August 1874.

I am in receipt of your communication of 12th inst.,* regarding draught of water of steamship "*Harvest Queen*," and can only reply by sending you copy of what I wrote you before on 11th May,† in answer to a similar inquiry. You will observe she was not so deep this voyage by 1½ inches, and was quite safe, and the passage is only 12 or 13 hours.

I am, &c.
(signed) *C. M. Duncan.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 190. —

(M. 11,337.)

Mr. *Arthur Pring* to Board of Trade.

Sir, Newcastle-on-Tyne, 14 August 1874.

I beg to acknowledge the receipt of yours of yesterday.*

The steamship "*Charles Mitchell*" is due at Sunderland this afternoon, having made a very good passage to Dieppe, notwithstanding the reports you have received. When I see the captain, will get all particulars as to the loading; but in the meantime, I find the quantity on board ship did not exceed what she has

* This refers to the ordinary Circular. *See* Appendix (B.).
† No. 141. Parliamentary Paper, No. 394 of 1874.

has been accustomed to take during the nine years this steamer has been navigating. The captain has been in command many years, and perfectly understands how to load the steamer; his instructions from me being never to load her too deep.

I remain, &c.
(signed) *Arthur Pring.*

To the Assistant Secretary,
Marine Department, Board of Trade

— No. 191. —

(M. 11,453.)

Mr. *Adams* to Board of Trade

Sir, Newcastle-on-Tyne, 17 August 1874.

My owner, Mr. Arthur Pring, has handed me your favour of the 13th inst., respecting the loading and draught of water of steamship "*Charles Mitchell*," of Newcastle, at Cardiff on the 6th inst.

I have been in command of the said ship 2½ years.

I generally load the said ship with 950 up to 960 tons of cargo in summer months till about 15th of October. Then, by my own arrangement, I load the ship with 30 or 40 tons less cargo in the winter months. As long as the ship has two feet or more freeboard from the bridge to poop, the lowest part of her, I consider her perfectly seaworthy. My vessel always rises three inches after getting out of the East Bute Dock, Cardiff. I have commanded several sailing vessels; been more than four years in a steamer. My instructions are never to load the steamer too deep.

I remain, &c.
(signed) *William F Adams,*
Master, steamship "*Charles Mitchell.*"

To the Assistant Secretary,
Marine Department, Board of Trade.

— No 192. —

(M. 11,453.)

Board of Trade to Mr. *A. Pring.*

Draught of Water.

Board of Trade, Whitehall Gardens,
24 August 1874.

Sir,

With reference to the letter dated 17th inst., from the master of the steamship "*Charles Mitchell*," I am directed by the Board of Trade to request you to be good enough to inform them whether this vessel has anything exceptional in her deck plans, &c., which enables her to load as deeply as is reported; whether the vessel has an iron deck; and to furnish them with a tracing of her longitudinal section.

I am also to call your attention to the fact that the vessel left dock with 11½ inches of list, and to state that this Board will be glad to receive any explanation which you may have to offer on this point.

I am, &c.
(signed) *Henry G. Calcraft.*

A. Pring, Esq.,
Steamship Owner, Newcastle-on-Tyne.

— No. 193. —

(M. 11,378.)

Messrs. *Thomas Baker & Son* to Board of Trade.

"Llandaff."

(Extract.)

Sir, Bute Docks, Cardiff, 15 August 1874.

* * * * * * *

Respecting communication M.,* in which it is said she was deeply and improperly laden, we are very much surprised, as she had her usual cargo, or a trifle less,

* This refers to the ordinary Circular. *See* Appendix (B.).

less, if anything, and performed her voyage as usual without inconvenience, while two other steamers which left with her were obliged to seek shelter, the weather being exceedingly stormy throughout the voyage.

The fact of the "*Llandaff*" being a little more by the stern than usual this voyage will, we think, account for her *appearing* deeper than usual, as well as how the marks aft were immersed.

We understand the surveyors always measure the *least* freeboard, so if we study to increase this it can be done by loading more on an even keel, which would give her fully *a foot more free board*, but would not be nearly so safe for the ship.

This vessel is peculiarly adapted to encounter bad weather, having a poop aft and kind of whale back top-gallant forecastle put on expressly, at a considerable expense, to make her a safe boat. Moreover, as she is only partly insured, it would be very much against our interest to overload. We trust the above explanation will suffice.

Yours, &c.
(signed) *Thomas Baker & Son*,
Managing Owners of S.S. "*Llandaff*."

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 194. —

(M. 11,413.)

Mr. *Peter M'Guffie* to Board of Trade.

Derby-buildings, 24, Fenwick-street, Liverpool,
Dear Sir, 15 August 1874.

In reply to your communication M., of 13th instant,* I beg to state that the "*Lady Maxwell*" on the voyage in question arrived safely at Liverpool after making an extra favourable passage, although the weather was most boisterous.

The captain of this steamer, who has had good experience in her, and understands her thoroughly, and to whom I have left in all cases the question of loading, states that he had her loaded 3 feet 3 inches to 3 feet 6 inches by the stern; so, although in Newport Dock she is stated to have had only a broadside of 18 to 20 inches at the lowest part, still you will perceive there was ample buoyancy forward. Again, in Newport Dock it is fresh water, which causes the vessel to be immersed 4 to 5 inches more than she is when she gets out amongst salt water.

This vessel is employed almost solely in a short coasting trade.

I am, &c.
Thomas Gray, Esq., (signed) *Peter M'Guffie*.
Board of Trade Office, London.

— No. 195. —

(M. 11,659.)

Mr. *Daniel Gillespie* to Board of Trade.

Sir, 32, City Quay, 22 August 1874.

Your communication of the 13th instant,* to Michael M'Crystal, Esq., owner of steamship "*Foyle*," has been forwarded to me for explanation as to the loading of the boat on the 6th instant. Now, I beg leave to state that I was not aware of the vessel having so little clear side, and also of her being measured by authority of the Board of Trade that particular voyage, but I can inform you that the "*Foyle*" performed her voyage from Newport to Dublin quite safe, and that I was not aware of her having only 1 foot 9 inches starboard side and 1 foot 8 inches port. I have had as much as 420½ tons pig iron in from Workington to

* This refers to the ordinary Circular. *See* Appendix (B.).

to Swansea, and did not consider her too deep; this particular time alluded to I had only 385 tons coal in. I think it very strange that I was not made aware of particulars alluded to before I sailed from Newport. I may also state that the officer appointed by the Board of Trade did measure her in Swansea when she had 400 tons in. and found her to have sufficient side. Any further information you may require I will be most happy to supply you with on application to me in Spencer Dock, Dublin, "S.S. *Foyle*."

Yours, &c.

Thomas Gray, Esq., (signed) *Daniel Gillespie*,
Whitehall Gardens, S.W. Master.

— No. 196. —

(M. 11,541.)

Mr. *G. Hedley* to Board of Trade.

Holmside and South Moor Collieries Office,
Dear Sir, Newcastle-on-Tyne, 19 August 1874.

In reply to your favour of 14th instant, the "*Carbon*" made the voyage in question all right.

Yours, &c.

The Assistant Secretary, (signed) For *Geo. Hedley*,
Board of Trade, Marine Department. *M. Archer.*

— No. 197. —

(M. 11,541.)

Board of Trade to Mr. *G. Hedley.*

Draught of Water.

Board of Trade, Whitehall Gardens,
Sir, 24 August 1874.

With reference to previous correspondence relative to the steamship "*Carbon*," I am directed by the Board of Trade to request you to be good enough to furnish them with a tracing of the longitudinal section of the vessel, and to inform them whether she has an iron upper deck, and if the "round or raised-up deck" referred to is a whale back.

I am, &c.

G. Hedley, Esq., (signed) *Henry G. Calcraft.*
Holmside and South Moor Collieries Office,
Newcastle-on-Tyne.

— No. 198. —

Mr. *G. Hedley* to Board of Trade.

(M. 12,684.)

Holmside and South Moor Collieries Office,
Sir, Newcastle-on-Tyne, 16 September 1874.

In reply to your inquiries of the 24th ult., in reference to steamship "*Carbon*," I beg to say I have not got a tracing of the longitudinal section. If you think it really necessary, I will have to stop the vessel to have it done. She has one whole deck of iron, a whaleback deck.

As she is now running regularly to the Thames, I would suggest that you send some person to look at her. This would suit your purpose best, and save the trouble of complaining about the draught.

She has always loaded to about the same water, and is an *excellent* vessel at sea.

The vessel will leave here this week, and will discharge coals for the South Metropolitan Gas Company, in the Surrey Canal Dock. You could see her on Tuesday next.

Yours, &c.

The Assistant Secretary, (signed) For *Geo. Hedley*,
Marine Department, Board of Trade. *M. Archer.*

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 199. —

(M. 11,964.)

Messrs. *John Holman & Sons* to Board of Trade.

Steamship "*City of Exeter.*"

23, St. Mary Axe, London, E.C.,
Sir, 31 August 1874.

In reply to your circular letter of the 28th instant,* this ship has duly arrived at Constantinople.

She is built with a long poop and topgallant forecastle, and we consider she was perfectly seaworthy in every respect when she left Newcastle.

She would, of course, be drawing more water in dock, when lying in fresh water, than at sea.

We are, &c.
The Assistant Secretary, (signed) *John Holman & Sons.*
Marine Department, Board of Trade.

— No. 200. —

(M. 11,392.)

Mr. *W. Laing* to Board of Trade.

Draught of Water.

24, Constitution-street, Leith,
Sir, 13 August 1874.

I am in receipt of your communication, dated 12th instant, marked M.,* relative to the loading of the steamship "*Headquarters*" at North Shields, and in reply, beg to state that the vessel sailed with less cargo than she has often had on board, and was anything but deeply laden for the summer season.

The measurements of clear side by the Board officials, and the statement of your advisers are, I beg to submit, equally fallacious. No account is taken of the vessel's construction with a long poop, 7 feet high, and topgallant forcastle of same height; nor of her trim, 3 feet by the stern with her bow high out of the water, necessitated by her engines and bunkers being placed aft, and thus entailing a rapid rise of the stern as the fuel is consumed.

It would be an easy matter to load the ship more by the head, and thus please the Board of Trade officials when measuring, but for the reasons above, such a proceeding would endanger the safety of the ship and all on board, by putting her entirely out of trim in a few days from consumption of coals.

I am, &c.
The Assistant Secretary, (signed) *Wm. Laing.*
Marine Department, Board of Trade.

— No. 201. —

(M. 11,392.)

Mr. *W. Laing* to Board of Trade.

Draught of Water.

24, Constitution-street, Leith,
Sir, 23 September 1874.

With reference to your communication, dated 12th August last, and my reply of 13th idem, relative to the loading of the steamship "*Headquarters*" from Shields, I have to inform you that, according to a letter received from the master, notwithstanding a strong head-wind and sea, during the greater portion of the voyage, the

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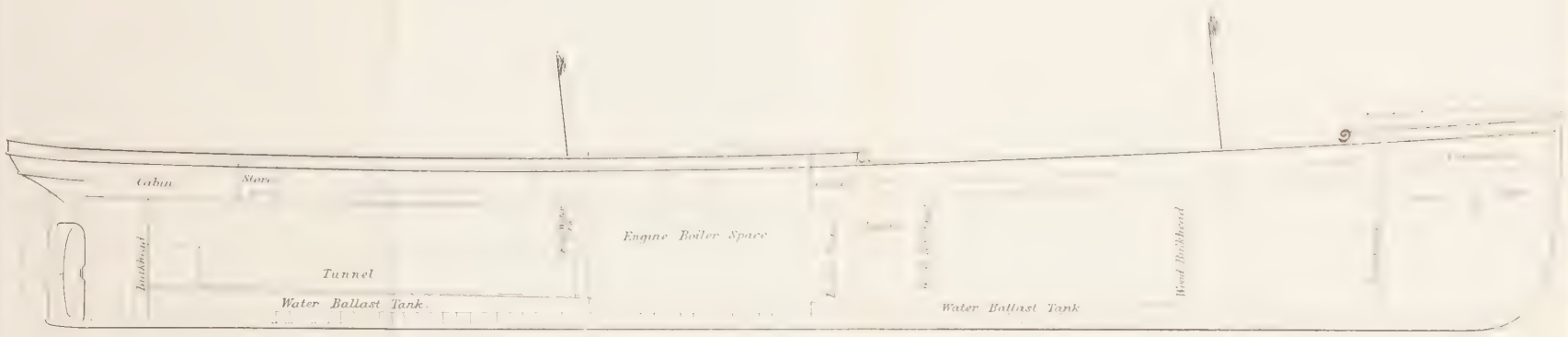
* This refers to the ordinary Circular. *See* Appendix (B.).

(Enclosure in No. 204.)

"JOHN MIDDLETON," No. 100. S.S.



Scale. $\frac{1}{16}$" = 1 Foot

the vessel made a very fair passage of within 19 days to Constantinople, and duly arrived in safety at her destination, Galatz. The master adds that from the manner in which the vessel was steaming, she would have made a quick passage but for the weather.

I may mention that the vessel arrived considerably by the head, owing to consumption of fuel, thus fully bearing out my remarks in my communication of 13th August above mentioned, to which I beg reference.

I am, &c.

The Assistant Secretary, (signed) Per *William Laing*,
Marine Department, Board of Trade. *Jas. L. Sinclair.*

— No. 202. —

(M. 12,301.)

Messrs. *Watts, Milburn & Co.* to Board of Trade.

85, Gracechurch-street, London, E.C.,
Sir, 8 September 1874.

In reply to your letter of the 20th ultimo,* "*John Middleton*" steamship arrived all well at Barcelona on the 26th ultimo. She was not so deeply laden on this voyage as on that previously by 1½ inches, and we sent you the captain's report on that voyage.

We are, &c.

The Assistant Secretary, (signed) *Watts, Milburn & Co.*
Marine Department, Board of Trade.

— No. 203. —

(M. 12,301.)

Board of Trade to Messrs. *Watts, Milburn & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
Gentlemen, 14 September 1874.

With reference to your letter of the 8th instant, relative to the steamship "*John Middleton*," I am directed by the Board of Trade to state that they will be glad to receive particulars of the peculiar construction of this vessel mentioned by the master in his letter of the 24th March last, forwarded by you to this Board on the 8th April,† together with a tracing of the vessel's longitudinal section.

I am, &c.

Messrs. Watts, Milburn & Co., (signed) *Henry G. Calcraft.*
85, Gracechurch-street, E. C.

—No. 204.—

(M. 12,865.)

Messrs. *Watts, Milburn & Co.* to Board of Trade.

85, Gracechurch-street, London, E.C.,
Sir, 21 September 1874.

In reply to your letter of the 14th instant, enclosed, we beg to hand you a tracing of "*John Middleton's*" longitudinal section. *See Tracing.*

The peculiar construction is that she has a long poop and topgallant forecastle, is fully built, and a buoyant lively vessel in a sea way.

We are, &c.

The Assistant Secretary, (signed) *Watts, Milburn & Co.*
Marine Department Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).
† *See* 63. Parliamentary Paper 394 of 1874.

— No. 205. —

(M. 11,823).

Mr. *John Coulson* to Board of Trade.

Re Draught of Water.

6, Regent Terrace, Newcastle-upon-Tyne,
27 August 1874.

Sir,

Referring to your favour of 21st instant,* I beg to inform you that the steamship "*Vale of Calder*," on leaving Leith on 17th instant, *was not deeply laden*, the vessel having on board then about 130 or 150 tons less than on the previous voyage from Leith to Bergen, about six weeks ago.

Yours, &c.
(signed) *John Coulson*, Managing Owner,
per *R. Y. Row.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 206. —

(M. 11,905.

Mr. *W. I. Young* to Board of Trade.

Londonderry Offices, Seaham Harbour,
28 August 1874.

Sir,

On my return to the office, after an absence of a few days, I find your favour of 25th instant,* addressed to the Dowager Marchioness of Londonderry, pointing out that the "*Londonderry*" steamship had sailed from Sunderland with a list of 11 inches to the starboard side. I can scarcely think it possible that such a thing could happen, as my orders as to the trimming of our steamers are very clear. The vessel in question has, however, not yet returned from Hamburg (though she had a safe and quick passage there). When she does arrive, I will make full inquiry into her state at the time of sailing, and further write your honourable Board on the subject.

I am, &c.
(signed) *W. I. Young*,
Chief Agent to Marquess of
Londonderry.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 207. —

(M. 12,177).

Mr. *H. A. Swan* to Board of Trade.

Middlesbrough, Yorkshire,
4 September 1874.

Dear Sir,

I am in receipt of your favour of 26th ultimo,* and, owing to absence from home for some considerable time, pressure of business has prevented my replying sooner.

I am not aware what clear side the "*Glencoe*" had when she sailed for Grangemouth, on the 22nd ultimo, but believe it would be somewhere about what you state. I can only say that, after a great deal of trouble with the surveyors here, and going to a lot of expense to meet their views, I was under the impression that this steamer was now everything that could be desired, and she had not, on the date named, nor any date since the matter was gone into, more than her usual cargo on board. She made her voyage in a very satisfactory manner, and I am quite of opinion that there was no cause whatever to complain of her condition.

As regards your letter of the 9th May, I can only refer you to the above remarks, and state, in addition, that we have never yet lost any life on any of our steamers.

Yours, &c.
(signed) *H. A. Swan.*

Thos. Gray, Esq.,
Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 208. —

(M. 11,912.)

Messrs. *W. S. Hunter & Pringle* to Board of Trade.

5, Queen-street, Newcastle-on-Tyne,
Sir, 28 August 1874.

In reply to your communication of the 27th instant,* respecting the draught of water per "*Charlaw*" steamship, we beg to inform you that we are not at present in a position to answer your queries, as the steamer is at sea; but, on her return next week, we shall have the matter fully gone into, and send you full particulars early as possible.

We are, however, able to say that the vessel made a good passage to the Thames as regards time.

Yours, &c.

The Assistant Secretary, (signed) *W. S. Hunter & Pringle.*
Marine Department, Board of Trade.

— No. 209. —

(M. 12,337.)

Messrs. *Smales Brothers* to Board of Trade.

Sir, Whitby, 8 September 1874.

In reply to yours of the 1st instant,* respecting the brig "*Una*," we now beg to inform you that this vessel arrived in London river, all well, on the 3rd instant.

The captain makes no complaint of the ship being too deeply laden, and mentions that he had to contend against wild and roving weather.

For your information, we beg to state that the "*Una*" being a broad vesesl compared with her depth, she appears to load deeply, although she makes favourable passages. Trusting this will be satisfactory,

We are, &c.

The Assistant Secretary, (signed) *Smales Brothers.*
Marine Department, Board of Trade.

— No. 210. —

(M. 12,064.)

Mr. *Robert Irvine* to Board of Trade.

Lloyd's Agency Office, West Hartlepool,
Sir, 2 September 1874.

I beg to acknowledge receipt of your communication,* *Re* Draught of Water of screw steamer "*Farnley Hall*," at North Shields, on the morning of the 27th August.

I happened to arrive there on that day at 9.30 a.m., when the Board of Trade Surveyor had just made his inspection, and I have no doubt his figures are correct; but on inquiry I found part of the water ballast had been left in the after tank, and the bunker coal had not been properly trimmed. I visited the vessel again at 1 p.m. and found her upright and considerably lightened, the water ballast having been nearly all pumped out and the bunkers trimmed. With reference to the draught of water, she does not load so deep as to show a clear side of only 1 foot 10½ inches; but, even at this draught, so unusual is the construction of the vessel that at each end of her the deck would be 8 feet 7 inches out of water, so you will observe she has enough reserve buoyancy to float her, even should the main deck be below the water amidships. She has not yet arrived at Savona, but when she does I shall be glad to inform you.

I am, &c.

The Assistant Secretary, (signed) *Robert Irvine.*
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 211. —

(M. 12,064.)

Board of Trade to Messrs. *R. Irvine & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
7 September 1874.

Gentlemen,

With reference to your letter of the 2nd instant, relative to the draught of water of the steamship "*Farnley Hall*," I am directed by the Board of Trade to request you to be good enough to furnish them with further particulars relative to the "unusual construction" of this vessel, and with a tracing of her longitudinal section.

I am, &c.
(signed) *Henry G. Calcraft.*

Messrs. R. Irvine & Co.,
Lloyd's Agency Office, West Hartlepool.

— No. 212. —

(M. 12,326.)

Mr. *Robert Irvine* to Board of Trade.

"*Farnley Hall.*"

Lloyd's Agency Office, West Hartlepool,
8 September 1874.

Sir,

Your favour, dated 7th instant, is duly to hand. I am preparing a tracing of the vessel which, with full particulars, shall be forwarded to you in due course.

I am, &c.
(signed) *Robert Irvine.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 213. —

(M. 12,414.)

Mr. *Robert Irvine* to Board of Trade.

"*Farnley Hall*" Steamship.

Lloyd's Agency Office, West Hartlepool,
10 September 1874.

Sir,

I have now the pleasure to enclose you tracing of the above steamer, and shall be glad to forward you any other particulars you require.

See Tracing.

I am, &c.
(signed) *Robert Irvine.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 214. —

(M 12,414.)

Board of Trade to Mr. *R. Irvine.*

Draught of Water.

Board of Trade, Whitehall Gardens,
16 September 1874.

Sir,

With reference to your letter of the 10th instant, enclosing a tracing of the steamship "*Farnley Hall*," I am directed by the Board of Trade to request you to be good enough to furnish them with a tracing of this vessel's *longitudinal section*, their object being to ascertain the amount of reserve buoyancy due to peculiar construction when the vessel is loaded, which the tracing referred to above does not show.

I am, &c.
(signed) *Henry G. Calcraft.*

R. Irvine, Esq.,
Lloyd's Agency Office, West Hartlepool.

— No. 215. —

(M. 12,414.)

Messrs. *Robert Irvine & Co.* to Board of Trade.

Lloyd's Agency Office, West Hartlepool,
Sir, 17 September 1874.

We are in receipt of your letter of 16th instant, addressed to our Mr. Irvine; he is at present from home, but returns in a few days, when we will lay it before him.

We are, &c.
The Assistant Secretary, (signed) For *Robert Irvine & Co.*,
Marine Department, Board of Trade. *F. L. Beck.*

— No. 216. —

(M. 12,526.)

Mr. *Robert Irvine* to Board of Trade.

Re Communication (M. 12,064).

Lloyd's Agency Office, West Hartlepool,
Sir, 12 September 1874.

I have this morning received the following from the captain of the steamship "*Farnley Hall*":

"Savona, 12 September 1874.

"Arrived all well this morning."

Any further information you may at any time require I shall be glad to furnish you with.

I am, &c.
The Assistant Secretary, (signed) Per pro *Robert Irvine*,
Marine Department, Board of Trade. *F. L. Beck.*

— No. 217. —

(M. 13,408.)

Mr. *Robert Irvine* to Board of Trade.

Lloyd's Agency Office, West Hartlepool,
Sir, 2 October 1874.

In conformity with your request I now beg to enclose you tracing showing longitudinal sheer level, buttock, and body lines of the steamship "*Farnley Hall*" in order that you may be able to calculate the reserve buoyancy. *See Tracing.*

I am, &c.
The Assistant Secretary, (signed) *Robert Irvine.*
Marine Department, Board of Trade.

— No. 218. —

(M. 12,287.)

Messrs. *Culliford & Clark* to Board of Trade.

Sir, Sunderland, 7 September 1874.

Owing to the writer's absence your letter of the 1st* has not had our usual attention. In reply thereto, we are not aware that the "*Celous*" left with the list named in your communication, or that she was ever before so laden. We saw the captain after the loading was completed, and he in no way intimated to us that such was the case with his vessel.

Yours, &c.
Thos. Gray, Esq., Board of Trade, (signed) *Culliford & Clark.*
Whitehall Gardens, London.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 219. —

(M. 12,109.)

Messrs. *Dixon & Harris* to Board of Trade.

57, Gracechurch-street, London, E.C.,
Sir, 2 September 1874.

We beg to acknowledge receipt of your communication of the 1st instant,* addressed to our Mr. J. Dixon, junior. We were not aware that the "*F. T. Barry*" had sailed with a list, as mentioned in your letter; we will make inquiries into the same.

We are, &c.
The Assistant Secretary, (signed) *Dixon & Harris.*
Marine Department, Board of Trade.

— No. 220. —

(M. 13,155.)

Messrs. *Dixon & Harris* to Board of Trade.

57, Gracechurch-street, London, E.C.,
Sir, 26 September 1874.

With reference to your communication of the 1st instant,* and our reply respecting the "*F. T. Barry,*" the ship having arrived home, we have made full inquiries into the list referred to, and find it was caused by a slight excess of bunker coals in the starboard bunker. The list was remedied in a very few hours by working coals out of the said bunker.

We are, &c
The Assistant Secretary, (signed) *Dixon & Harris.*
Marine Department, Board of Trade.

— No. 221.

(M. 12,413.)

Mr. *J. L. Hill* to Board of Trade.

Draught of Water.

Dear Sir, Southampton, 9 September 1874.

We are in receipt of yours* respecting the overloading of our steamship "*Bromsgrove,*" which left Sunderland on the 2nd instant; for your guidance we beg to say that she arrived here in due course on the 4th instant, and we do not think she was overladen.

Yours, &c.
The Assistant Secretary, (signed) pro *W. Hill & Co.,*
Marine Department, Board of Trade. *Jas. L. Hill.*

— No. 222. —

(M. 12,457.)

Mr. *Beath* to Board of Trade.

Offices, 1, Victoria Chambers, Belfast,
Sir, 11 September 1874.

The secretary of the above company duly received your communication of the 8th instant,* in reference to the loading of their steamer "*Llewellyn*" on the 3rd instant, with iron ore for Newport. The vessel made her passage on that occasion exceedingly well; took the ordinary time, 40 hours, and delivered 250 tons, her average cargo. The captains of the company's various steamers get their vessels loaded to please themselves, and take such amount of cargo as they can work safely and comfortably with.

Yours, &c.
The Assistant Secretary, (signed) *R. M. Beath,*
Marine Department, Board of Trade. Superintending Engineer.

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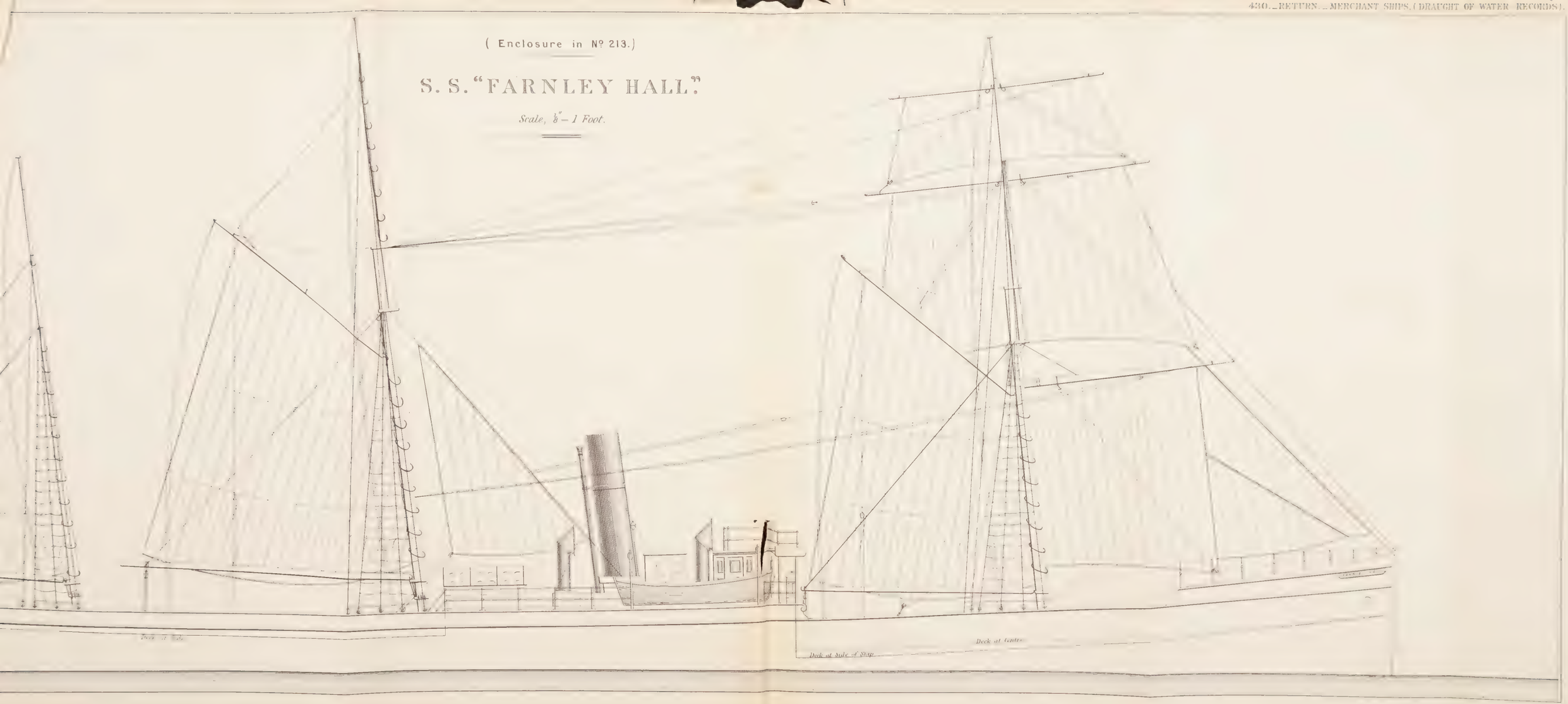
*This refers to the ordinary Circular. *See* Appendix (B.).

(Enclosure in Nº 213.)

S. S. "FARNLEY HALL."

Scale, $\frac{1}{8}$" = 1 Foot.



(Enclosure in Nº 217.)

LINES OF THE S.S. "FARNLEY HALL."

Scale, $\frac{1}{8}$" = 1 Foot.

— No. 223. —

(M. 12,427.)

Mr. *John Helman* to Board of Trade.

Guernsey, 10 September 1874.

Gentlemen,

Your favour of the 8th instant* to hand and note contents. "*Rifleman*" made her passage as stated by enclosed telegram; have never known her go to sea improperly laden, or having an unusual list, and can only account for the present circumstance by her having left dock before being properly trimmed.

I remain, &c.

The Board of Trade. (signed) *John Helman.*

Enclosure in No. 223.

Telegram.

Peter Abraham Mahy, brigantine "*Rifleman*" of Guernsey, to Mr. *John Helman*, No. 3, Plaiderie-lane, St. Peter's Port, Guernsey.

"*Rifleman*" safe arrived this evening; will write particulars to-morrow by post.

8 September 1874.

— No. 224. —

(M. 12,517.)

Mr. *John M. Lennard* to Board of Trade.

Middlesbrough-on-Tees, 12 September 1874.

Sir,

In reply to your circular of yesterday,* the "*Huntcliff*" left here in good trim, and arrived safely at Rotterdam.

As previously advised, this steamer has high ends, for which your surveyors should make proper allowance when reporting clear side in the lowest midship section.

Yours, &c.

Thomas Gray, Esq., (signed) *John M. Lennard.*
Marine Department, Board of Trade.

— No. 225. —

(M. 12,517.)

Board of Trade to Mr. *John M. Lennard.*

Draught of Water.

Board of Trade, Whitehall Gardens,
16 September 1874.

Sir,

With reference to your letter of the 12th instant, relative to the loading of the steamship "*Huntcliff*," I am directed by the Board of Trade to request you to be good enough to furnish them with a tracing of this vessel's longitudinal section, together with any further observations you may have to offer respecting her construction.

I am, &c.

J. M. Lennard, Esq., (signed) *Henry G. Calcraft.*
Steamship Owner, Middlesboro'-on-Tees.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 226. —

(M. 12,623.)

Mr. *John S. Barwick* to Board of Trade.

Ryhope Office,
Sir, Sunderland, 15 September 1874.

Your communication of 12th instant* duly received. The "*Ayton*" steamship arrived at Hamburg quite safe and well, up to time, notwithstanding the rather heavy weather she must have experienced. Further, I had a letter from captain sent ashore on sailing, saying his draught of water was 16 feet aft and 13 feet forward, which he considered by no means deep loading for this ship.

Yours, &c.

The Assistant Secretary, (signed) Per pro *John S. Barwick*,
Marine Department, Board of Trade. *J. C. Hunter.*

— No. 227. —

(M. 13,020.)

Mr. *C. E. Stallybrass* to Board of Trade.

Sir, Cardiff, 24 September 1874.

I beg to acknowledge the receipt of your favour of 12th instant,* relative to the steamer "*Hero*," bound from this to Rochfort, and at the same time to apologise for the delay in replying, which has been caused by my absence from home.

I beg to inform you that the said steamer duly arrived at that port in perfect safety, and at the same time to state that I am informed, not only by my superintendent engineer, but also by my managing clerk, both of whom saw the "*Hero*" sail, that not only was she moderately laden, but also that she had not the list indicated by you. I have caused inquiries to be made amongst your officials here who saw the steamer sail, but cannot find from any of them that such a report as made by you came from their office; and also I beg to assure you that it is my earnest desire at all times to avoid overloading and improperly loading any of the steamers under my management.

I am, &c.

Thomas Gray, Esq., (signed) *Charles E. Stallybrass.*
Assistant Secretary, Board of Trade.

— No. 228. —

(M. 12,824.)

Mr. *W. Brow* to Board of Trade.

93, East Clyde-street, Helensburgh,
Sir, 17 September 1874.

The "*Jessie Osborne*" on 9th instant* had a list, at which time there was 25 tons coal on her port side, upper deck, and was in process of being put below and trimmed, when your surveyor made his notes.

The "*Jessie Osborne*" did not leave Glasgow till 10th, at which time she was perfectly upright.

I am, &c.

Thomas Gray, Esq., London. (signed) *William Brow.*

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 229. —

(M. 12,611.)

Messrs. *Hammond, Emes & Co.* to Board of Trade.

"*Ethel*" Steamship.

5, Wellington-street, Hull,
Sir, 15 September 1874.

We are in receipt of your communication of 14th instant,* addressed to our senior, R. H. E. Hammond, and referring to the condition of our steamship "*Ethel*," when leaving Sunderland for Cronstadt on the 10th instant. We regret that we cannot inform you whether the measurement for clear side was really as stated to you, but we are in a position to state that the dead weight on board was not in excess of her usual cargo, which she has carried for three years without loss of life, and with almost complete immunity from accidents and perils of the sea. The present master has commanded her from her being built (excepting one or two months); he has unlimited discretion from us to load his ship according to his own judgment; and having to take all responsibility, and sailing in her himself, *together with his wife and child*, we have not the least doubt but that she left Sunderland in a perfectly seaworthy condition. We may add that the "*Ethel*" has the character of being a very comfortable sea-boat.

We remain, &c.

The Assistant Secretary, (signed) *Hammond, Emes & Co.*
Marine Department, Board of Trade.

— No. 230. —

(M. 12,611.)

Messrs. *Hammond, Emes & Co.* to Board of Trade.

"*Ethel*" (Steamship), from Sunderland to Cronstradt.

Sir, Hull, 19 September 1874.

We have to advise you of the safe arrival of this steamer after seven days' passage. No damage.

We remain, &c.

The Assistant Secretary, (signed) *Hammond, Emes & Co.*
Marine Department, Board of Trade.

— No. 231. —

(M. 13,272.)

Mr. *E. G. Henesey* to Board of Trade.

East Downshire Steamship Company, Limited,
Sir, Dundrum, County Down, 28 September 1874.

I have the honour to acknowledge receipt of your letter dated 17th instant. The steamship "*Lady Downshire*" made the voyage in question in her usual good time, and had nothing extraordinary to report on arrival.

In explanation of what has apparently led your surveyor to think her dangerously deep, I desire to offer the following explanation:—The vessel in question is quite new, having only been put to work last November; she is of the very highest class at Lloyd's, having been specially built for this company's own trade and under their closest supervision. She is an exceedingly strong ship and is far above Lloyd's requirements, being very heavily plated. Her frames are only 18 inches apart for about 70 feet amidships (instead of the customary spaces), has two extra bilge keelsons, and over all an iron deck sheathed with pitch pine. She has most excellent and thoroughly efficient machinery, and her engines are 10-horse power more than is given usually to boats of her size. Her hold capacity shows about 290 tons, but her great strength and weight of hull immerse her deeper in proportion than ordinary boats, so I would never think of putting her actual dead weight on board. Her crew, who has been on board from the time she first came out, consider her fit to face any ordinary gale with 250 tons aboard, and they report her to be a capital sea-boat and very lively. Her

* This refers to the ordinary Circular. *See* Appendix (B.).

Her master always trims her considerably by the heel, as he considers her much more safe in that trim, and the engines are far more effectual, as the propeller rarely gets out of water. Having a break aft and high engine-room, iron coamings for skylight keeps her perfectly safe there. I fear that, from the ship's appearance, your surveyor has judged her rather harshly, as from her great structural strength I am firm in the belief that this steamer would be alive and perfectly sound in a gale that would work ordinary Channel steamers to pieces.

I think it wise to put these facts before you, as I believe, if they are taken into consideration, she will be found quite up to your requirements. I am anxious to carry out the spirit of your instructions.

I am, &c.

Thomas Gray, Esq. (signed) *E. G. Henesey.*

— No. 232. —

(M. 13,272.)

Board of Trade to Mr. *E. G. Henesey.*

Draught of Water.

Board of Trade, Whitehall Gardens,

Sir, 7 October 1874.

With reference to your letter of the 28th ultimo, relative to the steamship "*Lady Downshire*," I am directed by the Board of Trade to state that if you will be good enough to furnish them with a tracing of the vessel's longitudinal section, her peculiarities of construction will receive due consideration.

I am, &c.

E. G. Henesey, Esq., (signed) *Henry G. Calcraft.*
Manager, East Downshire Steamship Company,
Dundrum, County Down.

— No. 233. —

(M. 13,827.)

Mr. *E. G. Henesey* to Board of Trade.

East Downshire Steamship Company, Limited,

Dear Sir, Dundrum, County Down, 10 October 1874.

I have your letter of 7th instant, and herewith enclose tracing of the midship section of steamship "*Lady Downshire.*" It does not show the reverse bars on frame irons; they are in the ship, as provided by contract note, thus:—

"Reverse frames of angle iron to extend across the floors on every frame, and to the stringer plate (iron deck) on each alternate frame; scantling as required by Lloyd's for their highest class; also, to have doubling pieces for securing keelsons and hold stringers to be not less than 2¼ by 2¼ and 4-16ths."

Please return this tracing when you have finished with it, and much oblige,

Yours, &c.

Henry G. Calcraft, Esq., (signed) *E. G. Henesey.*
Board of Trade.

— No. 234. —

(M. 13,827.)

Board of Trade to Mr. *E. G. Henesey.*

Unseaworthiness.

Board of Trade, Whitehall Gardens,

Sir, 20 October 1874.

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 10th instant, inclosing a tracing of the midship section of the steamship "*Lady*

Lady Downshire," which is returned herewith in compliance with your request.

The Board desire me to state that, although in the case of a small vessel with so great a sheer it is difficult to give an opinion without a longitudinal drawing, they do not think, even taking into consideration the shortness of the passage, that Captain Sandeman's requirements have been excessive.

I am, &c.
(signed) *Thomas Gray.*

E. G. Henesey, Esq.,
East Downshire Steamship Company (Limited),
Dundrum, County Down.

— No. 235. —

(M. 15,352.)

Board of Trade to Mr. *E. G. Henesey.*

Unseaworthiness.

Board of Trade, Whitehall Gardens,
14 November 1874.

Sir,

I AM directed by the Board of Trade to transmit to you, for the information of the East Downshire Steamship Company (Limited), the accompanying copy of the report of their surveyors upon the loading of the steamship "*Lady Downshire.*"

The Board desire me to state that the document is forwarded to you in compliance with the terms of "The Merchant Shipping Act, 1873," and I am to add that their order thereupon is, that the vessel be released when the requirements of their surveyors have been complied with.

I am, &c.
(signed) *Henry G. Calcraft*

E. G. Henesey, Esq., Manager
East Downshire Steamship Company (Limited),
Dundrum, County Down.

Enclosure in No. 235.

Glasgow Surveyors to Board of Trade.

Board of Trade Surveyor's Office,
12, James Watt-street, Glasgow,
13 November 1874.

Sir,

As directed, we have this day surveyed the steamship "*Lady Downshire,*" and find her drawing 8 ft. 6 in. forward and 10 ft. 10½ in. aft, with a clear side of 1 ft. 5½ in. to starboard and 7 in. to port; or a mean of 1 ft. ½ in. in fresh water, or 1 ft. 3 in. in salt water.

As this vessel had been detained before, and allowed to sail by the Board's permission (upon Captain Sandman's representation), drawing 8 ft. forward in salt water and 10 ft. 10 in. aft, we considered that by relieving her of her present deck load she would have about the same draught. We have therefore insisted upon this being done, accepting at the same time a guarantee from the charterers "that they will not load any more cargo at Greenock."

We found the fore hold prepared for the reception of about 25 tons of sugar, which the owner and master both admitted were intended to be shipped. This additional weight would have reduced her freeboard to 9 or 10 inches in salt water, and by unduly depressing her bow would render her still more unseaworthy.

We have telegraphed surveyors at Greenock to be careful in watching the vessel, not to allow her to take any more cargo.

"We are therefore of opinion that this ship was at the time of survey, having regard for the service for which she was then intended, unfit to proceed to sea without serious danger to human life."

We are, &c.
(signed) *Robt. Murray.*
G. Colquhoun Scone.
William G. B. Manser.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 236. —

(M. 15,353.)

TELEGRAM.

Mr. *E. G. Henesey*, Glasgow, to Board of Trade.

"*Lady Downshire*" has been surveyed by your surveyors, and they will allow her to proceed if four tons cargo now on deck be landed. Charterers prepared to put this into hold where it was going, and stevedores on board for that purpose, when ship was detained coming out dock. Your surveyors have asked crew, and they are perfectly satisfied to sail with ship. Please wire authority to release her. All consequences of detention are at your Board's risk and expense.

13 November 1874.

— No. 237. —

(M. 15,389.)

Mr. *E. G. Henesey* to Board of Trade.

141, Buchanan-street, Glasgow,
13 November 1874.

Dear Sir,

I took the liberty of telegraphing you to-day, as per copy,* concerning the detention of steamship "*Lady Downshire*," and have now received your reply, saying the vessel can only be released at the report of your Board's surveyors.

These gentlemen suggested that some rough cargo now on deck should be landed, but the chartered owner of the ship demurs to doing so. From my view of the case, I cannot possibly see that the removal of these goods, which weigh about four tons, would improve the ship's seaworthiness; such a trifling item of weight could not possibly make any alteration of note. The ship has been surveyed to-day by several captains, and others of large coasting experience, and they pronounce her perfectly seaworthy, in which the captain and crew entirely agree. I have no doubt your surveyor's report will be with you to-morrow morning, and trust you will be able to telegraph me to above address that you can permit the vessel to proceed.

In the meantime this detention and its consequences are at your Board's risk and expense.

Yours, &c.
(signed) *E. G. Henesey.*

Thomas Gray, Esq., London.

— No. 238. —

(M. 15,389.)

TELEGRAM.

Mr. *E. G. Henesey*, Glasgow, to Board of Trade.

"*Lady Downshire*" now lying in fresh water; at deepest immersion has, according to your surveyors, 13 inches freeboard, with 30 inches lead forward. When she reaches salt water will rise three half inches, and always improving draught through consuming coal. Please wire orders to release her.

14 November 1874.

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* *See* above, No. 237.

— No. 239. —

(M. 15,389.)

Board of Trade to Mr *E. G Henesey*.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
16 November 1874

Sir,

In reply to your letter and telegram of the 13th instant, I am directed by the Board of Trade to inform you that, inasmuch as they can only be guided in the matter of the loading of the steamship "*Lady Downshire*" by the opinion of their surveyors, they are unable to release the vessel until she has been lightened to their satisfaction.

I am, &c.
(signed) *Thomas Gray.*

E. G. Henesey, Esq.,
Care of Mr. A. C. Colvil, 141, Buchanan-street,
Glasgow.

— No. 240. —

(M. 12,841.)

Messrs. *Anthony Harris & Co.* to Board of Trade.

Middlesbrough, 19 September 1874.

Sir,

Yours of the 18th is to hand.* In reply, the "*Fulmar*" arrived safe at Stettin on Thursday at noon.

We are not in the habit of loading our boats deeply; in fact the masters have orders not to do so.

We never heard what water she was in when she left us; she sailed on Sunday morning, but have no idea she was too deeply loaded.

We are, &c.
signed *Anthony Harris & Co.*

Mr. Thomas Gray, Board of Trade.

— No. 241. —

(M. 13,572.)

Mr. *C. J. Briggs* to Board of Trade.

Hylton Castle, near Sunderland,
6 October 1874.

Sir,

In reply to your circular letter of the 5th instant,* I beg to say my name was removed from the steamship "*Said's*" register on the 19th May, but as my brother, R. S. Briggs, is recorded as a shareholder, I have made inquiries into the subject, and herewith enclose the managing owners' explanations. I deem it necessary to add that my brother and myself were, and are only recorded as, owners to secure monies advanced to Mr. George Swainston, and are unaware of the trades the "*Said*" steamship is employed in, and have hitherto not interfered in her management.

Yours, &c.
(signed) *C. J. Briggs.*

Thomas Gray, Esq.

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* This refers to the ordinary Circular. *See* Appendix (B.).

Enclosure in No. 241.

Sir, Sunderland, 6 October 1874.

In reply to your letter of yesterday, addressed to Mr. C. J. Briggs, I beg to state that at the time the Board of Trade surveyor went on board the steamship "*Said*," at Shields, the vessel's condenser was being sluiced with water, which caused a large quantity to accumulate in the ship's bottom. This could not be pumped out until the vessel was ready for sea, in consequence of the donkey pump being disconnected for repair.

As soon as this was completed the water was pumped out, and the vessel restored to proper trim.

She arrived safely at Barcelona in about 12 days, the captain reporting all well on board.

I am, &c.

Thomas Gray, Esq. (signed) *Geo. Swainston.*

— No. 242. —

(M. 12,840.)

Messrs. *Wells Brothers* to Board of Trade.

"*Hilda.*"

Commercial Chambers, Hull,
19 September 1874.

Dear Sir,

We have your letter of the 18th,* and in reply, when the "*Hilda*" left Hull she was not more deeply laden than customary, nor so much so as is safe for a ship of her construction. She was chartered by me for a lump sum for a general cargo; I had no interest in her being overloaded. The master had his instructions to mark her load line, and I am told this was done, and the line was not ded.

Yours, &c.

The Assistant Secretary, (signed) *Mark Wells.*
Marine Department, Board of Trade.

— No. 243. —

(M. 12,955.)

Messrs. *Wells Brothers* to Board of Trade.

Steamship "*Hilda.*"

Commercial Chambers, Hull,
22 September 1874.

Dear Sir,

I refer you to my favour of the 19th, and now beg to inform you that this ship has arrived at Cronstadt, having met with heavy weather in the Baltic, after a passage of six-and-a-half days. This is the best reply we can give to the statement that she was too deeply ladened.

Yours, &c.

The Assistant Secretary, (signed) *Mark Wells.*
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 244. —

(M. 13,340.)

Mr. *Edward Eccles* to Board of Trade.

(Extract.)

Buddle's, West Hartley,
Fitting Office, Newcastle-on-Tyne,
30 September 1874.

Sir,

* * * * * *

I did not reply to yours of the 21st,* about the "*King Coal*" steamship, having given you particulars of this boat some time ago; I may add that she never made so quick a voyage out as the one you complained of.

Yours, &c.

Thos. Gray, Esq., Board of Trade. (signed) *Edward Eccles.*

— No. 245. —

(M. 13,202.)

Mr. *R. Hindhaugh* to Board of Trade.

Sir, Newcastle-on-Tyne, 28 September 1874.

Referring to your letter of the 21st instant,* respecting the loading of the steamship "*Benton*" on the 16th instant, I have the honour to inform you that the captain of the vessel did not consider her improperly laden, inasmuch as she had only on board 922 tons instead of her usual cargo of 950 tons, she drew 14½ feet forward and 16 feet aft, and was in perfectly good trim, the voyage was made to the perfect satisfaction of all on board.

Yours, &c.

The Assistant Secretary, (signed) *Robert Hindhaugh.*
Marine Department, Board of Trade.

— No. 246. —

(M. 13,324.)

Messrs. *W. S. Hunter & Pringle* to Board of Trade.

5, Queen-street, Newcastle-on-Tyne,
30 September 1874.

Sir.

In reply to your circulars dated 27th ultimo and 23rd instant,* respecting the clear side and list of "*Charlaw*" steamship, we have to inform you that the latter was caused in both instances by the teemers at the dock putting more fire coals into one bunker and less into another than they should have done, but we have given such instructions as we trust will prevent a recurrence of the same.

Yours, &c.

(signed) *W. S. Hunter & Pringle.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 247. —

(M. 13,419.)

Mr. *George Otto* to Board of Trade.

Sir, North Shields, 2 October 1874.

In reply to your communication, dated 24th ultimo,* I beg to state that your informant on the steamship "*Alice Otto*" is in error.

The vessel had a freeboard of 3 ft. 5 in. starboard and 3 ft. 11 in. port, consequently only 6 inches list, and not 17 inches list. as stated in your despatch. She drew 18 feet of water in Tyne Dock, and 17 ft. 9 in. over Shields Bar.

It

* This refers to the ordinary Circular. *See* Appendix (B.).

It would hardly require any proof on my part that your informant's data are inaccurate, since it must be plain to any person of very ordinary knowledge of such matters that it would be next to impossible for a vessel to get out of dock with 17 inches list.

The boat this time has in 1,773 tons including bunker stock, and she generally takes in 1,930 tons, and performs her voyages satisfactorily and without any mishaps of any kind; I therefore consider that it must be plain to you that she is neither deeply nor improperly laden, and I feel certain of her performing her present trip satisfactorily barring collisions.

I am, &c.
(signed) *George Otto.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 248. —

(M. 13,131)

Messrs. *Bailey & Leetham* to Board of Trade.

Baltic and Portuguese Steamship Offices,
Commercial-road, Hull, 25 September 1874.

Dear Sir,

I AM requested by Mr. Bailey to ask you to favour him with an interview that he may explain and demonstrate to you, by models, the answer we have to make to a letter received by us this morning from the Board of Trade,* with reference to the steamship "*Cossack*" being reported to the Board as "deeply laden," and "having a clear side of only 2 ft. 4 in.," and other matters in connection with steamers respecting their carrying capacities, which might prove interesting to you.

Yours, &c.
(signed) Pro *Bailey & Leetham,*
J. L. Adams.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 249. —

(M. 13,131.)

Board of Trade to Messrs. *Bailey & Leetham.*

Draught of Water.

Board of Trade, Whitehall Gardens,
30 September 1874.

Gentlemen,

WITH reference to your letter of the 25th instant relative to the steamship "*Cossack*," I am directed by the Board of Trade to inform you that Captain Scales of this department will be happy to see Mr. Bailey any day between the hours of 11 and 5, and to hear his explanation respecting this vessel's loading.

I am, &c.
(signed) *Henry G. Calcraft.*

Messrs. Bailey & Leetham,
Commercial-road, Hull.

— No. 250. —

(M. 13,311.)

Messrs. *Bailey & Leetham* to Board of Trade.

Baltic Portuguese Steamship Offices,
Commercial-road, Hull, 30 September 1874.

Sir,

IN reply to your letter of the 24th instant,* referring to our steamship "*Cossack*" having been reported to the Board of Trade as having sailed from this port for Cronstadt on the 19th instant, having a clear side of only 2 ft. 4 in., and desiring to be informed as to how she performed the voyage in question, and whether she is usually so deeply laden, we beg to inform you that we have received

* This refers to the ordinary Circular. *See* Appendix (B.).

received advice of her safe arrival, and that she has repeatedly carried a hundred tons more cargo than she had on board on the voyage in question; meeting also with very tempestuous weather, without suffering the least injury.

We may, perhaps, be allowed to explain that the engines are protected by the watertight bulkhead of the poop deck, raised 4 ft. 6 in. from the main deck, so that aft she had nearly seven feet of clear side over the engines.

We have, &c.
(signed) *Bailey & Leetham.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No 251. —

(M. 13,403.)

Mr. *W. Jameson* to Board of Trade.

Sir, Bagdale, Whitby, 26 September 1874.

Your letter of the 24th instant is to hand.*

The "*Sir Henry Havelock*" did not sail from the Tyne until the 24th, consequently it is yet too soon to hear of her arrival in Holland; as soon as I do so I will inform you, as requested.

I remain, &c.
(signed) *Wm. Jameson.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 252. —

(M. 13,403.)

Mr. *W. Jameson* to Board of Trade.

Sir, Bagdale, Whitby, 2 October 1874.

In compliance with the request contained in your letter of the 24th September, I have to inform you that the "*Sir Henry Havelock*" sailed from the Tyne on the 24th ultimo, and arrived at Rotterdam on the 29th, all well.

Being laden with gas coals, she was somewhat deeper than usual; if she goes across the North Sea again I will write to instruct the master not to load her so deep; but I presume if she goes coastwise you would consider the clear side mentioned in your letter quite sufficient.

I am, &c.
(signed) *Wm. Jameson.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 253. —

(M. 13,340.)

Mr. *E. Greeby* to Board of Trade.

Buddle's, West, Hartley,
Fitting Office, Newcastle-on-Tyne,
30 September 1874.

Sir,

I duly received yours of 25th instant,* with reference to the loading of the steamship "*Edward Eccles*," at Cardiff; this morning I had the opportunity of seeing the captain, and he informs me that said steamer was loaded with small coal of a very heavy nature, and as this was the first time he had taken Welsh coal, he was a little deceived as to the heavy character of that class of coal; in addition the forehold was finished at the tips, but the afterhold from lighters, and when he found out that the boat was more water than usual forward, it was too late to baulk her aft, and instead of leaving hatchway or other space he considered safer to fill her up rather than leave part cargo out aft for the purpose of saving (for appearance sake) a little in the draught of water; said steamer is full poop, and has a good and bold stern; her peculiar construction may not give a large clear side, but there cannot be any doubt as to her good and safe sea-going qualities. The voyage was performed *with ease and safety* with a strong *head wind*

* This refers to the ordinary Circular. *See* Appendix (B.).

wind blowing. I have not the smallest desire, on the contrary, to overload the steamers I have under my care as managing owner, and my instructions on this point are clear and distinct to the captains.

Greater consideration, in my opinion, should be given to the nature of the cargo, and for runs along the coast of 36 to 48 hours' passage.

* * * * * *

I did not reply to yours of 21st about this "*King Coal*" steamship, having given you particulars of this boat some time ago. I may add that she never made so quick a voyage out as the one you complain of.

I am, &c.

Thos. Gray, Esq., Board of Trade. (signed) *Edward Greeby.*

— No. 254. —

(M. 13,217.)

Mr. *Thomas Baker* to Board of Trade.

Bute Docks, Cardiff,
28 September 1874.

Sir,

I HAVE your communication of the 25th instant,* handed to me by Mr. Vellacott respecting the "Llandaff" steamship, and beg to state that, with the exception of five tons of rubbish, cleanings of the bilges and boiler scale, &c. placed on the deck (aft) on the port side, giving the vessel a list a-port, and which could not be thrown overboard until the vessel got outside, I say, with this exception, the vessel was not too deeply or improperly loaded.

The ship is my property and only partly insured, and would not like to run the risk of losing her.

I have been to sea nearly all my lifetime, 20 years of which I have been in *command* of steamers ranging from 150 to 1,500 tons register, and in all my experience know of no boat I should feel my life so secure in as the "*Llandaff*," and this is corroborated by the captain, officers, and crew.

She left here on the voyage in question *blowing a gale*, and performed her voyage as usual with ease and safety; she has since returned to Newport loaded, and sailed again for Waterford this morning.

The "*Llandaff*" has all the properties of a lifeboat, and to measure her least freeboard on leaving here is a *very imperfect criterion* for such a boat, for if I only sought to satisfy the Board of Trade surveyor, I could load her so as to have *one-third more* freeboard with the *same* weight of cargo.

I am, &c.

The Assistant Secretary, (signed) *Thomas Baker.*
Marine Department, Board of Trade.

— No. 255. —

(M. 13,197.)

Mr. *Thomas Shiel* to Board of Trade.

Middlesbrough-on-Tees,
28 September 1874.

Dear Sir,

I HAVE your notice* respecting the steamship "*Sixty-Six*" being overladen on the 23rd instant, bound to Grangemouth. In reply have to say that she performed her voyage well. I am not in the habit of loading the boat so deep by 10 tons; unfortunately the engineer had got too many bunker coals, which proved to be the cause of the boat being so deep.

I shall guard against a repetition of the same.

Yours, &c.

Thos. Gray, Esq., Board of Trade. (signed) *Thomes Shiel.*

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 256. —

(M. 13,472.)

The Secretary to the General Iron Screw Collier Company to Board of Trade.

General Iron Screw Collier Company (Limited),
17, Gracechurch-street, London, E.C.,
3 October 1874.

Sir,

I BEG to acknowledge the due receipt of your letter, dated 26th September,* stating that the steamship "*Lady Derby*" is reported to have left Middlesbrough on the 23rd September for London, coal laden, having a clear side of only two feet, stating also that the Board of Trade are advised that with such clear side the vessel was deeply laden. Asking to be informed how she made the voyage in question, and whether she is usually so deeply laden, and inviting any other observations, in reply I am to state that the "*Lady Derby*" arrived duly and safely in London on the 25th September, after making a good voyage.

As to how the ship is usually laden, I am to refer you to the ship's official log-books, and to my letters of 18th April and 20th June last.†

†*See* Nos. 258 and 259.

You have at various times stated that the Board of Trade are advised that, with the clear side indicated (at one time said to be 2 ft. 6 in., at other times 1 ft. 10 in., 2 ft. 2½ in, 2 ft. 4 in., 2 ft. respectively), the vessel is deeply laden.

I am to observe that my directors got no assistance from such communications; they are indefinite, and tend to prejudice a just settlement of conflicting interests in the event of loss. The directors will, however, be happy to receive, as stated in my letter of 20th June, any precise rules as to how ships are to be loaded.

Meanwhile, with due deference to the opinions of the advisers of the Board of Trade, my directors maintain that the "*Lady Derby*" is at all times loaded with a safe and sufficient freeboard; and, as some proof of this, I may mention that she has never cost her underwriters 1 *d.* for damage from bad weather, although she has been running nine summers and nine winters through since she was built in 1865.

I am also to refer you to the annexed copy of Captain Coleman's letter, dated 1st October.

I am, &c.
(signed) *Wm. T. Balcombe*,
Secretary.

The Assistant Secretary,
Marine Department, Board of Trade.

Enclosure in No. 256.

To the Board of Directors of the General Iron Screw Collier Company (Limited).

To the Chairman.

Steamship "*Lady Derby*," Penrith,
1 October 1874.

Sir,

I BEG to state the Board of Trade surveyor never came on board my ship on the 23rd instant; he walked on the quay and looked at her. On September 15th, laying at Bolckow's Wharf, at Middlesbrough, he said "*Lady Derby*" loaded very bold; likewise he measured the side, and said if all ships loaded like her, there would not be so many complaints to the Board of Trade, and not so much letter writing. He further stated that he should not be afraid to go to any part of the world with her; that was on the 15th instant, and the above ship had no more weight in on the 23rd than she had on the 15th instant.

I have often been at sea in gales of wind with the above ship, with as much or more weight in than she had on the 23rd instant, and never had any accident or damage by the sea no more than splitting a sail or losing a little bulwark, but not much of the latter. I can speak in the highest terms as to "*Derby's*" qualifications; a more kindly sea-boat is not

* This refers to the ordinary Circular. *See* Appendix (B.).

not to be found, and I am proud to state to you that I have had over five years' experience as mate and master. Trusting this will prove satisfactory,

I am, &c.
(signed) *Henry B. Coleman,*
Master, Steamship "*Lady Derby.*"

To J. E. McConnell, Esq., Chairman,
General Iron Screw Collier Company (Limited),
17, Gracechurch-street, London.

— No. 257. —

(M. 13,472.)

Board of Trade to the Secretary to the General Iron Screw Collier Company.

Draught of Water.

Board of Trade, Whitehall Gardens,
13 October 1874.

Sir,

With reference to your letter of the 3rd instant, enclosing a letter from the master of the steamship "*Lady Derby*," in which he states that this Board's surveyor never went on board that vessel on the 23rd ultimo, for the purpose of recording her draught of water, I am directed by the Board of Trade to inform you that, looking to their surveyor's report on this matter, they see no reason to doubt the accuracy of his measurement on that occasion.

I am to add that the Board of Trade do not wish to give any instructions as to the loading of vessels, but when they consider that vessels are deeply or improperly laden, they point out this fact to owners, and are happy to receive any explanation they may have to offer on the subject.

I am, &c.
(signed) *Thomas Gray.*

The Secretary,
General Iron Screw Collier Company,
17, Gracechurch-street, E.C.

— No. 258. —

(M. 6158.)

General Iron Screw Collier Company to Board of Trade.

General Iron Screw Collier Company, Limited,
17 Gracechurch-street, London, E.C.,
18 April 1874.

Sir,

Your circular, dated 1874, promising a further communication, is to hand. Without waiting for such other communication, however, I beg to say that the "*Lady Derby*" steamship has throughout the winter been uniformly loaded to about the same marks, the clear side at any one time being only a few inches more or less than at any other time.

I enclose a paper, in a tabulated form, which shows (amongst some other particulars of her last 20 voyages, which were from the northern coal ports to London, Rochester, Dieppe, Boulogne, Hamburg) that the ship, 16 hands all told, has worked with great regularity throughout the winter; that the master, mate, second mate, and two of the seamen have gone with her every voyage; that the chief engineer has been with her 10 voyages, the second engineer 12 voyages, and all the other hands (excepting two firemen only) have been with her the last five voyages, that is to say, since 13th of March.

I submit that these facts form a very strong proof that the "*Lady Derby*" has been navigated with a safe and sufficient freeboard, and that no one on board would endorse Mr. Plimsoll's objection.

The captain is a very careful and competent man, and has been in the company's service many years. The loading of the "*Lady Derby*," as also the loading of every ship of the company, is left solely to the discretion of the captain, with instructions from the Board of Directors not to overload at any time.

I am, &c.
(signed) *Wm. Balcombe,*
Secretary.

The Assistant Secretary,
Marine Department, Board of Trade.

Enclosure in No. 258.

Dates of Sailing, 1873–74, Loaded.	Sept. 26.	Oct. 3.	Oct. 10.	Oct. 17.	Oct. 26.	Nov. 5.	Nov. 18.	Nov. 27.	Dec. 10.	Dec. 21.	Jan. 20.	Jan. 28.	Feb. 3.	Feb. 13.	Feb. 27.	Mar. 13.	Mar. 20.	Mar. 28.	April 8.	April 16.
Where from and Where to.	Sunderland—Rochester.	Sunderland—Rochester.	Sunderland—Rochester.	Sunderland—Rochester.	Shields—Rochester.	Shields—Rochester.	Swansea—Rochester.	Sunderland—Rochester.	Shields—Rochester.	Sunderland—Rochester. (24 days under repair.)	Sunderland—London.	Sunderland—London.	Shields—London.	Shields—London.	Granton—Dieppe.	Sunderland—Rochester.	Sunderland—Boulogne.	Shields—London.	Shields—Hamburg.	West Hartlepool—London.
Master	[	–	–	–	–	–	–	–	–	Coleman.	–	–	–	–	–	–	–	–	–	–]
Mate	[	–	–	–	–	–	–	–	–	Beck.	–	–	–	–	–	–	–	–	–	–
Second Mate	[	–	–	–	–	–	–	–	–	Lomas.	–	–	–	–	–	–	–	–	–	–
Cook	[	–	–	–	–	–	Newman.	–	–	–	–	–	–]	[–	–	Hepper.	–	–	–	–
Boatswain				[–	–	–	–	–	–	Davidson.	–	–	–	–	–	–	–	–	–	–
Carpenter	[	–	–	–	–	–	–	Jordan.	–	–	–	–	–	–]	[–	Pringle.	–	–	–	–
A. B.	[	–	–	–	–	–	–	–	–	Bloom.	–	–	–	–	–	–	–	–	–	–
A. B.	[	–	–	–	–	–	–	–	–	Driffill.	–	–	–	–	–	–	–	–	–	–
A. B.	[	–	–	–	–	–	–	–	Bean.	–	–	–	–	–]	[–	Roope.	–	–	–	–
A. B.															[–	Beadle.	–	–	–	–
Engineer	[	–	–	–	Mack.	–	–	–	–]	[–	–	–	–	Phillipson.	–	–	–	–	–	–
Second Engineer	[	–	–	Stringer.	–	–]	[–	–	–	–	–	–	Dadswell.	–	–	–	–	–	–	–]
Fireman											[–	–	–	–	Potter.	–	–	–	–	–]
Fireman					[–	– Wiffin.	–]								[–	– Wiffin (again).	–	–	–	–]
Fireman				[–	–	– Cooper.	–	–	–]						[–	Cooper (again).				
Fireman															[–	Hennis. –]				

— No. 259. —

(M. 9190.)

General Iron Screw Collier Company to Board of Trade.

General Iron Screw Collier Company, Limited,
17, Gracechurch-street, London, E.C.,
20 June 1874.

Sir,

In reference to your letter, dated the 6th instant,* as to a report that the steamship "*Lady Derby*" sailed for Havre from Cardiff on the 28th ultimo, "having a clear side of only 2 feet 10 inches starboard, 1 foot 11 inches port," stating that the Board of Trade are advised that, "with the clear side and list above indicated, the vessel was deeply and improperly laden," and inquiring how she made the voyage, and whether she is usually "so deeply" laden, I am instructed by the Board of Directors to reply that the ship made the passage with comfort and punctuality, as usual, arriving off Havre on the 30th May. As to her usual draught of water, I am to refer you to my letter of the 18th April last; and as to the alleged list, I am to say that the master denies there was any list whatever, and affirms that, on the contrary, she was perfectly upright when she went to sea. (Copy of the master's report is annexed.)

I am to repeat that the loading of the company's vessels is left entirely to the discretion of the masters (all of whom are certificated by the Board of Trade); that the directors, in the case of the "*Lady Derby*" especially, rely on the master's judgment with confidence, because of his long experience in that ship (five or six years), and of the evident satisfaction with which the same crew sail in her again and again (*see* my letter of 18th April), and the same mate, second mate, and second engineer are still sailing with her.

The directors cannot but consider the opinion of a master under such circumstances of great importance, and far more so than advice given by parties who do not sail in the ship.

If, however, the Board of Trade think the "*Lady Derby*" is laden "too deeply," the directors will be glad to know by what precise rules they are to instruct the masters of the company's ships to load.

The directors do not understand why their time, and that of the officers and servants of the company, should be occupied in inquiring into and rebutting the allegations often so loosely and incorrectly made in the reports to the Board of Trade,

* This letter refers to the ordinary Circular. *See* Appendix (B.).

Trade, and which third parties may desire to accumulate and resort to for statistical or sensational purposes. The directors think, on the contrary, that there is some objection to such records, as they are calculated to prejudice the owner's just interests in the event of the ship being lost.

I am, &c.

The Assistant Secretary, (signed) *Wm. Balcombe*,
Marine Department, Board of Trade. Secretary.

Enclosure in No. 259.

COPY of the MASTER'S REPORT.

Dear Sir, Steamship, Lady Derby, 11 June 1874.

IN reply to your telegram of the 8th instant as regards "*Lady Derby*" having list, reported to you by Board of Trade surveyor, ship, on leaving Cardiff, was perfectly upright. Cargo on board being 744 tons 11 cwt., but certainly ship had a list when he measured her, but the ship's inside bilge was on the mud, and vessel heeling off, possibly vessel might have had the list he says. Had he have waited 20 minutes, he would then have seen her upright; and where the impropriety rests, I think, is with the Board of Trade to appoint such surveyors, who does not know whether a ship is aground or afloat.

Extract from Log Book:—"May 28th 1874, 3 p.m. Representative of Board of Trade came on board. Was made aware of ship being on the ground; his reply being to the mate, 'That did not matter.'" All I can say is, they are a great nuisance; it's well known the "*Lady Derby*" has very often had larger cargoes. Trusting this will meet with your approval,

I am, &c.

W. Balcombe, Esq. (signed) *Henry B. Coleman.*

— No. 260. —

(M. 13,595.)

Messrs. *Adam & Co.* to Board of Trade.

17, Regent Quay, Aberdeen,
Sir, 6 October 1874.

WE have received your letter of yesterday,* and in reply we have to state that the steamship "*Camerata*" arrived at Reval, all well, on the 28th ultimo, thus making the run from Shields in five days.

Would you be good enough to state for our information how this steamer should be laden. We employ men to command her, holding the necessary Board of Trade certificates, and we shall be glad to convey to them any suggestion you may have to make.

We are, &c.

To the Assistant Secretary, (signed) *Adam & Co.*
Marine Department, Board of Trade.

— No. 261. —

(M. 13,595.)

Board of Trade to Messrs. *Adam & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
Gentlemen, 14 October 1874.

WITH reference to your letter of the 6th instant, relative to the loading of the steamship "*Camerata*," I am directed by the Board of Trade to inform you that they do not wish to fix any load-line for this vessel, but if in their opinion she is deeply laden, they will call your attention to the fact and request you to be good enough to favour them with any explanation you may have to offer.

I am, &c.

Messrs. Adam & Co., (signed) *Thomas Gray.*
17, Regent Quay, Aberdeen.

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* This refers to the ordinary Circular. *See* Appendix, (B.).

— No. 262. —

(M. 13,340.)

Mr. *Edward Eccles* to Board of Trade.

Buddle's West Hartley Fitting Office, Newcastle-on-Tyne,
Sir, 6 October 1874.

I HAVE yours of yesterday,* and entirely disagree with the report and your conclusions; having given you particulars of the construction of this boat, my answer is simply that the "*King Coal*" steamship arrived at Gluckstadt yesterday after encountering a violent gale.

Yours, &c.
(signed) *Edward Eccles.*

The Assistant Secretary, Marine Department.

— No. 263. —

(M. 13,966.)

Messrs. *J. Young, Ehlers & Co.* to Board of Trade.

32, Great St. Helen's, London, E.C.,
Dear Sir, 13 October 1874.

IN reply to your letter of the 12th instant, marked M. (—)*, we have to inform you that the "*Terlings*" made her voyage to Niew Diep in perfect safety, and that we do not consider she was too deeply laden for a vessel of her build.

Yours truly,
The Assistant Secretary, (signed) *J. Young, Ehlers & Co.*
Marine Department, Board of Trade. *J. E. Drew.*

— No. 264. —

(M. 13,872.)

Mr. *Baddeley*, Jun., to Board of Trade.

Gentlemen,* Brixham, 12 October 1874

YOUR favour respecting draught of "*Symmetry*" from Glasgow to Corunna to hand and noted, and in reply beg to say the ship in question has only just become our property, but from her late owners I learn she has always taken her cargoes safely, and has also taken more dead weight than she has now.

I will not fail to advise you of her arrival out, and how ship has acted

I am, &c.
The Assistant Secretary, (signed) *J. W. Baddeley*, Jun.
Marine Department, Board of Trade.

— No. 265. —

(M. 13,872.)

Mr. *Baddeley*, Jun., to Board of Trade.

"*Symmetry*"

Gentlemen, Brixham, 14 November 1874.

REFERRING to this vessel, I beg to advise you of her safe arrival at Corunna from Glasgow after a boisterous passage.

I am, &c.
(signed) *J. W. Baddeley*, Jun.

To the Honourable Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 266. —

(M. 13,749.)

Messrs. *Bailey & Leetham* to Board of Trade,

Baltic and Portuguese Steamship Offices,
Commercial-road, Hull,
9 October 1874.

Sir,

In reply to your letter of the 6th instant,* with reference to the draught of the steamship "*Essex*" when leaving this port for Cronstadt on the 26th ultimo, we beg to inform you that she has arrived safely at her destination; that she has frequently taken 100 to 150 tons more cargo than on the voyage in question; and that her poop-deck extends more than half her length, so that the remarks in our letter of the 30th ultimo with respect to the report concerning the draught of our steamship "*Cossack*"† equally applies to this ship.

† *See* No. 248, *ante*.

We are, &c.
(signed) *Bailey & Leetham.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 267. —

(M. 13,670.)

Messrs. *Dixon & Harris* to Board of Trade.

57, Gracechurch-street, London, E.C.,
8 October 1874.

Sir,

We are in receipt of your communication of the 7th instant.* The "*George Locket*" steamship arrived, all well, at Hamburg on the 3rd instant; she had not more cargo than usual this voyage.

We are, &c.
(signed) *Dixon & Harris.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 268. —

(M. 13,691.)

Mr. *R. Hindhaugh* to Board of Trade.

Newcastle-on-Tyne, 8 October 1874.

Sir,

In reply to your circular of the 6th instant,* respecting the draught of water of the steamship "*Benton*," I have to inform you that there is no foundation for these continued reports about this vessel. The voyage complained of, she had in 70 tons less than her usual cargo, and the voyage was performed satisfactorily.

I am, &c.
(signed) *Robert Hindhaugh.*

The Assistant Secretary,
Board of Trade.

— No. 269. —

(M. 13,938.)

Messrs. *James Little & Co.* to Board of Trade.

Greenock, 13 October 1874.

Sir,

We beg to acknowledge receipt of your letter of 7th instant,* addressed to our Mr. Robert Little at Barrow, and to say in reply that the "*Apollo*" is a new iron steamer, with an iron deck, classed at Lloyd's and specially constructed very strongly to carry heavy cargoes, that she has a top-gallant forecastle, and a break

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* This refers to the ordinary Circular. *See* Appendix (B.).

break deck four feet high, extending from stern to fore part of engine-room. That she was at the time to which you refer, about to start on her third voyage to Gibraltar, and was in fresh water in Cardiff Dock, and would of course float lighter when she got into salt water, and that she had on board considerably less weight than her builders constructed her to carry.

That by the captain's report she was trimmed two and a half feet by the stern, which he considered her best trim; that from her construction and trim, the lowest point would be immediately in front of the break deck, and that her average freeboard would be very much more than her freeboard at that particular point.

That the quantity of cargo, and the loading and trim of the steamer, was left by us to the discretion of the captain, who has large experience, and is a careful cautious man, in whose judgment we have every confidence, and that he has taken and carried safely similar cargoes before, and made good passages, and reported the steamer to be a safe and able sea-boat with them.

As to the list to starboard to which you refer, at the time she was reported on by your surveyor, we have no advice, but we have no doubt if anything was wrong in this respect the captain would rectify it before proceeding to sea, which he could easily do, the cargo consisting wholly of coals in bulk.

In further confirmation of the captain's judgment, we have the pleasure of informing you that we have advice from him intimating the steamer's safe arrival at Gibraltar.

We have only to add in conclusion, that it certainly is not our wish that any of our steamers should go to sea too deeply laden, or in anything but the best trim and most efficient order, and we have always been most anxious and careful in these points.

We are, &c.

Thomas Gray, Esq.,
Assistant Secretary, Marine Department,
Board of Trade.

(signed) *James Little & Co.*

— No. 270. —

(M. 13,731.)

Mr. *Louis Guéret* to Board of Trade.

Re Steamship "*Caen.*"

Sir, Cardiff, 9 October 1874.

In reply to your favour of yesterday's date,* I beg to state that my steamship "*Caen*" left Cardiff for Caen on 3rd instant with a clear side of 18 inches or thereabouts. When your surveyor came on board the ship she was under repairs, and had been so for the previous three days, during which time having no steam up we had allowed the waste water from the boilers and condenser &c. to run into the fore tank. Your surveyor was on board on the 2nd instant, and measured the water in the tank, finding 17 inches, and he also measured the side and found it as you report. He was requested to call on the following day, after the water had been pumped out, but did not do so. The captain of the ship saw him afterwards, and asked him why he did not come on board to measure the ship as he had promised, and your surveyor told him that it was all right, and he did not think it necessary to call again. In conclusion, I have only to state that when the ship left Cardiff she had about 18 inches of freeboard, and was in every respect in first-class trim for the voyage.

I remain, &c.

The Assistant Secretary,
Board of Trade.

(signed) *Louis Guéret,*
per *M. P. Whitefield.*

* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 271. —

(M. 13,731.)

Board of Trade to Mr. *Louis Guéret.*

Unseaworthy—Draught of Water.

Board of Trade, Whitehall Gardens,
Sir, 20 October 1874.

With reference to your letter of the 9th instant, relative to the loading of the steamship "*Caen*," I am directed by the Board of Trade to inform you that if this vessel loads again as deeply as on the occasion referred to, she will probably be detained.

I am, &c.
Louis Guéret, Esq., (signed) *Thomas Gray.*
Steamship Owner, Cardiff.

— No. 272. —

(M. 15,369.)

Mr. *W. W. Steer* to Board of Trade.

Sir, Salcombe, 13 November 1874.

In reply to yours of the 12th October* concerning "*Geraldine*," it was an error on the part of your surveyor. The "*Geraldine*" was hauled from under the tip on the 3rd of October, was then carefully and properly trimmed, and made ready for sea, and sailed on the 7th of October.

Yours, &c.
T. Gray, Esq. (signed) *W. W. Steer.*

— No. 273. —

(M. 13,987.)

Messrs. *John Fenwick & Son* to Board of Trade.

44, Coal Exchange, London,
Sir, 14 October 1874.

We are in receipt of your letter of the 8th instant, M. (—)* informing us, "that the steamship '*Hawthorns*' of London is reported to have sailed from the port of North Shields with coals for London on the 3rd instant, having a clear side of 3 feet 11 inches port, 3 feet 1 inch starboard."

In reply we beg to inform you that the master of the "*Hawthorns*" denies that she sailed with a list, and states, on the contrary, that she was perfectly upright.

He further states that when your surveyor measured her, she was lying at the buoys in Tyne Dock, at which time there was a little water in the ballast tanks, and a strong wind from the W.N.W., which increased the apparent list.

When the engineer had got steam up, the tanks were pumped out, and the vessel sailed without any list.

We are, &c.
The Assistant Secretary, (signed) *John Fenwick & Son.*
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 274. —

(M. 14,055.)

Messrs. *Chas. Bingham & Son* to Board of Trade.

7, Eden Quay, Dublin, 15 Oct. 1874.

Sir, Stores, No. 2, Sir John's Quay.

We have to acknowledge the receipt of your letter of the 14th inst.,* referring to the loading of our steamer "*Sheldrake*" at Newport on the 9th inst.

In reply, we beg to inform you that we are much surprised at the statement contained in your letter. The "*Sheldrake*" is a very strong built steamer, having been intended as a blockade runner during the American War, and lies very low in the water; she is double-bottomed, has her plates a quarter inch thicker than required by Lloyd's rules, with double angle irons and strigers. She carries 600 tons cargo, with 40 tons in bunkers.

On the 8th inst., in place of being overloaded, she had in only 542 tons 10 cwt., being 57 tons 10 cwt. short of her cargo.

Before leaving Newport, we received the following telegram from her captain :— "I leave this evening; cargo not complete by three or four waggons; by leaving I will discharge on Saturday." These facts speak for themselves, and can be verified if you require it.

This steamer has now made 16 trips from Newport to Ireland. The following have been her cargoes :—574, 578, 579, 549, 561, 542, 568, 568, 575 555, 581, 572, 566, 557, 600, 572; which shows that in one instance only she had her full cargo on board.

We are, &c.

Thomas Gray, Esq., (signed) *Chas. Bingham & Son.*

&c. &c.

— No. 275. —

(M. 14,132.)

Messrs. *D. G. Pinkney & Son* to Board of Trade.

149, High-street, West, Sunderland,

Sir, 17 October 1874.

Your letter of the 15th inst. is to hand.*

In reply, we beg to say we are not aware of the steamship "*Imbro*" being "deeply or improperly laden" at Cardiff. We have no report from Captain Colling of her draught of water; but from the returns of weight taken in, we do not believe she would be too deep, and we think your officer must have made an incorrect report.

As to the vessel having a little list, this is of no consequence. She is tender loaded, and will list a little either way, but this makes her an excellent sea-boat. The "*Imbro*" is as fine a vessel as need go to sea, and in splendid order, and not overloaded, we feel quite sure.

We should be glad to know what clear side the Board of Trade consider the "*Imbro*" should have when laden, taking into consideration the construction of the vessel, or to know the rule they apply.

Yours, &c.

The Assistant Secretary, (signed) *D. G. Pinkney & Son.*

Marine Department, Board of Trade.

— No. 276. —

(M. 14,469.)

Mr. *Kendrick* to Board of Trade.

41, Quayside, Custom House Chambers,

Sir, Newcastle-on-Tyne, 22 October 1874.

In reply to your communication* respecting steamship "*Rayner*," beg to state the present voyage is her first one. In consequence of such, and taking the season

* This refers to the ordinary Circular. *See* Appendix (B.).

season of the year in consideration to commence with, she has been dispatched about 100 tons short of dead weight capacity, showing a mean clear side of about 5½ feet.

Any information you may require as to how she makes the voyage shall be glad to furnish you with on her return.

I am, &c.

To the Assistant Secretary, (signed) *W. V. Kendrick.*
Marine Department, Board of Trade.

— No. 277. —

(M. 14,371.)

Messrs. *Strong, Reid & Page* to Board of Trade.

Sir, Liverpool, 22 October 1874.

In reply to your letter of the 20th inst.,* we beg to say our steamer "*Tinto*" did leave Cardiff on the 15th inst. for Gibraltar, where she arrived early yesterday morning, all well, after a rather rough but rapid passage.

The engines of all our boats, but one large one, are placed close aft in the heel, in order to have both the fore and after holds always cool for fruits of all sorts, so that when loaded with a bulk cargo like coal that about fills both holds, they sit more by the stern than steamers do with their engines amidships.

The ship was not deep, and could have easily taken 25 to 30 tons more, and not have been deeply laden; but the people who are going creeping about ships round the coast know very little of these things, and we really have neither time nor inclination to enlighten them.

We are, &c.

(signed) *Strong, Reid & Page.*

Thomas Gray Esq., Board of Trade.

— No. 278. —

(M. 14,990.)

Messrs. *Wells Brothers* to Board of Trade.

Dear Sir, Commercial Chambers, Hull, 5 Nov. 1874.

Your favour of the 2nd* is duly received, and in reply, the "*Hilda*" upon her outward voyage to Cronstadt had only on board her usual dead weight, and would therefore be drawing the usual water. She arrived out at Cronstadt either Tuesday or Wednesday. We cannot make out by our telegram; if Tuesday, an extraordinary good passage; and if Wednesday, a very satisfactory one.

Yours, &c.

Thomas Gray, Esq., Assistant Secretary, (signed) *Charles Wells.*
Marine Department, Board of Trade.

— No. 279. —

(M. 15,036.)

Messrs. *Lambert Bros. & Scott* to Board of Trade.

85, Gracechurch-street, London, E.C.

Sir, 6 November 1874.

In reply to yours of yesterday,* we beg to say that it is not usual for the "*Prudhoe Castle*" steamship to go to sea with a list such as your report mentions, which is the first intimation we have had of it.

As to the voyage in question, however, she made an excellent passage, being the only boat at the time which saved her second tide to London. She arrived here at the Derrick at 5 a.m. on the 30th ult., having left Shields Bar at 4 p.m. on the 28th ult.

We are, &c.

Thomas Gray, Esq., (signed) Pro *Lambert Bros. & Scott,*
Marine Department, Board of Trade. *J. Bell.*

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 280. —

(M. 14,873.)

Messrs. *Stephen H. Lennard & Co.* to Board of Trade.

1, Pier-street, and 33, Wellington-street,
Hull, 3 November 1874.

Sir,

Replying to your favour* respecting the steamship "*Ems*," as we have already informed you, this steamer having her engines and bunker space right aft, may look deep just before the break deck, while she shows a bold bow of three or four feet, and from the top of the break deck to water's edge of at least three feet. She arrived safely at Caen last Friday.

Yours, &c.
(signed) *Stephen H. Lennard & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No 281 —

(M. 15,046.)

Mr. *W. I. Young* to Board of Trade.

West Hartlepool, 6 November 1874.

Sir,

In reply to your letter of 2nd instant* (addressed to Mr. Webster, Sunderland), I beg to inform you that the "*Gipsey Queen*" steamship, of West Hartlepool, made the voyage to and from Hamburg as usual, and she is now in dock here without any special occurrence.

She was loaded two inches deeper forward than generally is the case, but she had still ample side, and was considered in good sea-going trim.

I have, &c.
(signed) *William I. Young.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 282. —

(M. 15,911.)

Messrs. *Culliford & Clark* to Board of Trade.

Sunderland, 24 November 1874.

Sir,

In reply to yours of the 9th instant,* we beg to advise you the steamship "*Cleanthes*" arrived safely at her destination in her usual good time, and by her captain's report we are informed that the clear side she had on leaving the Tyne was several inches more than stated in your letter.

Yours, &c.
(signed) *Culliford & Clark.*

Thomas Gray, Esq.

— No. 283. —

(M. 15,911.)

Board of Trade to Messrs. *Culliford & Clark.*

Draught of Water.

Board of Trade, Whitehall Gardens,
5 December 1874.

Gentlemen,

With reference to your letter of the 24th ultimo, relative to the loading and voyage of the steamship "*Cleanthes*," and stating that she had several inches more clear side on leaving the Tyne than reported, I am directed by the Board of Trade to state, for your information, that this vessel's clear side at Cardiff on the 17th October 1873 was 2′ 3″ starboard, and 2′ 7″ port, which is nearly identical with that she had when sailing from North Shields on the 31st October last.

I am to add that, looking to the report of their surveyor, the Board see no reason to doubt the accuracy of the measurement on the occasion last referred to.

I am, &c.
(signed) *Thomas Gray.*

Messrs. Culliford & Clark,
34, Great St. Helen's, E.C.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 284. —

(M. 15,303.)

Mr. *James Westoll* to Board of Trade.

"*Mercator.*"

213, High-street, Sunderland,
10 November 1874.

Sir,

I HAVE your communication of yesterday's date.* I am not aware this steamer was below her usual draught of water. The captain had the loading in his own hands. It not unfrequently happens that water ballast is left in the ship after arrival in port, and this is not pumped out until the vessel gets steam up again to proceed to sea.

I will advise you how she performs her voyage.

I am, &c.
(signed) *James Westoll.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 285. —

(M. 15,303.)

Mr. *James Westoll* to Board of Trade.

"*Mercator.*"

213, High-street, Sunderland,
10 December 1874.

Sir,

IN further reply to your communication of the 9th ultimo, this steamer arrived at Malta on the 18th November, and although the weather was dreadful between Gibraltar and that port, she sustained no injury whatever.

I remain, &c.
(signed) *James Westoll.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 286. —

(M. 15,212.)

Mr. *James Westoll* to Board of Trade.

"*Pyrrha.*"

213, High-street, Sunderland,
10 November 1874.

Sir,

IN reply to your communication of the 9th instant,* if this steamer had only the clear side you name, she was a little deeper than usual. The loading was left entirely to the captain, and I cannot fully explain it without communicating with him.

The vessel however arrived at Swinemunde without disaster of any kind.

I remain, &c.
(signed) *James Westoll.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 287. —

(M. 15,315.)

Messrs. *John Young, Ehlers & Co.* to Board of Trade.

32, Great St. Helen's, E.C.,
12 November 1874.

Dear Sir,

MR. F. D. LAMBERT has forwarded your letter of the 9th instant* to us as managers or the steamship "*Jubilee,*" and in reply thereto we have to state that

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* This refers to the ordinary Circular. *See* Appendix (B.).

that we consider the clear side with which the "*Jubilee*" sailed on the 4th instant, to be quite sufficient for a coasting voyage, and we may add that she made her voyage with perfect safety.

Yours, &c.
(signed) Per *J. Young, Ehlers & Co.*,
J. E. Drew.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 288. —

(M. 15,432.)

The Secretary to the General Iron Screw ollier Company to Board of Trade.

General Iron Screw Collier Company, Limited,
17, Gracechurch-street, London, E.C.,
14 November 1874.

Sir,

In reply to your letter of the 11th instant* about the "*J. E. McConnell's*" draught, I am again to point out the prejudicial effect on this company's just claims which such letters may have in case the ship should be lost. Also that the directors are still awaiting information from the Board of Trade as to the proper freeboard to which ships should be loaded.

The "*J. E. McConnell*" will not be due at Civita Vecchia until next week, but she is usually laden to the same marks, and she has been running for seven years without disaster from bad weather.

I am, &c.
(signed) *Wm. T. Balcombe,*
Secretary.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 289. —

(M. 15,492.)

Messrs. *J. Manners & Co.* to Board of Trade.

West Hartlepool, 16 November 1874.

Sir,

We are in receipt of your communication marked M., of the 14th instant,* and are very much surprised at its contents, as the "*Amcott*" has taken in this time fully 50 tons less weight than she generally carries, with a freeboard of 2 ft. 6½ in. from the fore part of the bridge.

The only way we can at all account for it is that the engineer may have left some of the water in the ballast tanks; we do not interfere with the captain in the loading of the vessel, as we consider he is the best judge.

We are, &c.
(signed) *J. Manners & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 290. —

(M. 15,838.)

Messrs. *J. Manners & Co.* to Board of Trade.

West Hartlepool, 23 November 1874.

Sir,

Agreeably to the request contained in your letter to us of the 14th instant,* we beg to inform you that the steamship "*Amcott*" arrived at Leghorn, all well, at 7 p.m. on the 21st instant, and judging from the account contained in the "Shipping Gazette" of Friday last (the 20th instant) she must have experienced very bad weather.

In future we would be much obliged if you would make any communication you have to make to the captain at the time, instead of to us several days after the ship has sailed, as in case the vessel should be too deeply laden, it is then to late to rectify it; and in case of loss after you report to us, it would attach to us a certain amount of culpability we had not the power to avoid, through receiving your

* This refers to the ordinary Circular. *See* Appendix (B.).

your notice too late, but of this you may rest assured, we never, for our own sakes, load our vessels too deeply, although to an inexperienced person they may appear low in the waist, on account of their great shear fore and aft, which is extra buoyancy, with which you do not credit us.

We will cause inquiries to be made if the ballast was all pumped out, but we are almost certain your officer at Cardiff has made some mistake.

Awaiting the favour of your reply to our observations,

We are, &c.

To the Assistant Secretary, (signed) *J. Manners & Co.*
Marine Department, Board of Trade.

— No. 291. —

(M. 15,838.)

Board of Trade to Messrs. *J. Manners & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
Gentlemen, 30 November 1874.

With reference to your letter of the 23rd instant, relative to the loading of the steamship "*Amcott*," and asking that future communications may be made to the masters of the vessels owned by you at the time of loading, I am directed by the Board of Trade to state that they cannot undertake the responsibility of advising the servants of shipowners, and that under the provisions of the Merchant Shipping Act they must hold the owner responsible and not the master. I am to add that the Board of Trade consider that the steamship "*Amcott*" was very deeply laden when sailing from Cardiff on the 9th instant, and that if she is again so deeply laden, she may run the risk of detention at the last moment.

I am, &c.

Messrs. J. Manners & Co., (signed) *Thomas Gray.*
Steamship Owners, West Hartlepool.

— No. 292. —

(M. 16,240.)

Messrs. *J. Manners & Co.* to Board of Trade.

Sir, West Hartlepool, 1 December 1874.

We beg to acknowledge the receipt of your letter of yesterday (M. 15,838), and note your remarks respecting the loading of the "*Amcott*;" we beg to confirm our previous opinions expressed to you in our former letters, that she was not overladen, and that she had from 50 to 60 tons in less than on previous voyages.

The vessel would also lighten when she left Cardiff several inches.

We are, &c.

To the Assistant Secretary, (signed) *J. Manners & Co.*
Marine Department, Board of Trade.

— No. 293. —

(M. 15,520.)

Mr. *Elford* to Board of Trade.

Sir, Swansea, 16 November 1874.

In reply to yours of the 14th instant,* respecting the "*Norwood*," I beg to differ with your informant. She is reported to have 250 tons of coal on board, which I doubt very much; at any rate, if she has, it is a very moderate cargo for a vessel 175 tons register; indeed, when I bought her, the sellers calculated she would carry 300 tons, but this was, of course, a mistake. I shall be happy to inform you of the result of the "*Norwood's*" voyage, and in conclusion have to remark

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* This refers to the ordinary Circular. *See* Appendix (B.).

remark that no one is more strongly opposed to loading vessels too deep than myself, and I always impress this on my captains; in fact, I never interfere with them about the loading, preferring them to use their own judgment as to the capabilities of their respective vessels, which I have found to answer very well; in proof of which I may mention that none of them have ever met with any serious mishap.

I am, &c.
(signed) *Thos. Elford.*

Thomas Gray, Esq.,
Board of Trade.

— No. 294. —

(M. 15,624.)

Mr. *H. Martini* to Board of Trade.

Royal Danish Vice Consulate, Glasgow,
18 November 1874.

Sir,

I HAVE the honour to acknowledge receipt of your communication of 16th* instant, and replying generally, I beg leave to observe that I certainly do not desire to overload any ship under my charge, be it sailer or steamer, and my constant effort is to keep them in first-rate order and well found. Steamship "*Rover*" sailed from the Clyde on 10th instant, according to the report sent to me, with a clear side of 1 foot 6 inches in fresh water, which is equal to 1 foot 10½ inches in salt water; and having regard to her construction, I do respectfully beg leave to submit that she was not overladen, in fact in very good order; and I doubt not she will now, as hitherto, do her work like a clock. I shall have pleasure in informing you.

I have, &c.
(signed) *H. Martini.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 295. —

(M. 15,998.)

Mr. *H. Martini* to Board of Trade.

Steamship "*Rover.*"

Royal Danish Vice Consulate, Glasgow,
24 November 1874.

Sir,

WITH reference to your communication of 16th instant, and my respectful reply of 18th instant, anent above-named steamer, I have now the honour to report that "*Rover*" steamship, David Jones, master, made the voyage in question, that is, from this harbour to Barcelona, in nine days and six hours, which I venture to think is most satisfactory.

I have, &c.
(signed) *H. Martini.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 296. —

(M. 15,681.)

Messrs. *J. & P. Hutchison* to Board of Trade.

69, Great Clyde-street, Glasgow,
19 November 1874.

Sir,

WE are favoured with your notice of 16th instant,* in regard to the loading of the steamer "*Minerva,*" which sailed hence to Bordeaux on 10th instant. In reply, the vessel was trimmed more than usually by the stern, which is the sole reason why she was, as you are advised, apparently deeply laden. Had she been

* This refers to the ordinary Circular. *See* Appendix (B.).

been trimmed as usual, only about one foot by the stern, she would have carried the same cargo, and yet have had a clear side to satisfy the scale adopted by you.

We have drawn the captain's attention, some time ago, not only verbally, but also in writing, to your rules and recommendations requesting his implicit attention thereto. We left the quantity to load and the trim at his discretion. We will call his attention to your notice, and get him to have his vessel properly trimmed before leaving the port in future. We may mention that the vessel had a safe and speedy run to Bordeaux, although she encountered some heavy weather on the passage.

We are, &c.

Thomas Gray, Esq., (signed) *J. & P. Hutchison.*
Marine Department, Board of Trade.

— No. 297. —

(M. 15,561.)

Mr. *James Boyd* to Board of Trade.

97, Wellington-street, Glasgow,
17 November 1874.

Sir,

I HAVE your letter, marked M (—) of 16th instant,* regarding *draught of water, "Annie" from Port Glasgow, on the 9th instant.*

My instructions are to load vessel during the winter months with 275 tons, with which dead weight she should have a freeboard of 1 foot 7 inches, and with which I consider her quite safe, having so many ports of shelter between Clyde and Dublin, to which she is a regular trader. On last voyage the stevedore exceeded this limit by five tons, she having had 280 tons on board.

She arrived at Dublin, all well, on the 11th instant.

I am, &c.

To the Assistant Secretary, (signed) *James Boyd.*
Marine Department, Board of Trade.

— No. 298. —

(M. 15,597.)

Messrs. *Henderson Brothers* to Board of Trade.

The "Anchor" Line of Transatlantic, Peninsular,
and Mediterranean Steam Packet Ships,
45 & 47, Union-street, Glasgow,
18 November 1874.

Sir,

WE beg to acknowledge receipt of your communication of 16th instant,* with reference to the "*Sidonian*," and have to state that this vessel arrived at Lisbon yesterday, having made the passage under the usual average time.

When leaving Glasgow she was not, in our opinion, too deep, nor was she improperly laden.

We are, &c.

The Assistant Secretary, (signed) *Henderson Brothers,*
Marine Department, Board of Trade. per *T. G. Anderson.*

— No. 299. —

(M. 15,671.)

Messrs. *John E. Swan & Brothers,* Limited, to Board of Trade.

Glasgow, 19 November 1874.

Sir,

WE duly received your communication of the 16th instant,* which we transmitted to our Middlesbrough firm, and find that the steamship "*Fitzwilliam*" was loaded in the same manner in which she has been for months past, and with the

* This refers to the ordinary Circular. *See* Appendix (B.).

the clear side stipulated by your surveyor, but the steamer did not make the voyage, having come into collision with the "*Fulmar*," which latter vessel was lying aground in the Tees.

We are, &c.
(signed) *John E. Swan & Brothers*, Limited,
per *Fred. G. Swan*, Director.

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 300. —

(M. 16,218.)

Mr. *R. Griffiths* to Board of Trade.

Sir, Dieppe, 30 November 1874.

In reply to yours of the 18th instant,* I beg to state that I am in command of the said ship "*Sybil Wynn*" for this voyage, and that I do not consider her overloaded, with the freeboard mentioned, *i. e.*, 1 foot 10 inches, in the waist or midships, that is, in such dead water as that of North Dock, Swansea, for I consider that a ship or model as that of "*Sybil Wynn*" should be measured in three different compartments, as she is formed with great sheer and 9 inches of round or rise in decks; then with the three departments and the said round of decks reduced to a mean, the ship would have over 3 inches freeboard to upper part of decks for every foot of immersion. And as a proof of the ship's seaworthiness and capability to prosecute her voyage, I beg to state that I loaded her with slates at Bangor, North Wales, for New Orleans, to the same marks as this last voyage, and her master and crew stated that they would never wish to make a voyage in a more lively ship; and for my part, although we encountered rough weather on our passage here, I found the ship behaving as well as it could be expected for any ship to do in a high cross sea, and I would with all confidence make the voyage in her to any part of North or South Atlantic. Now, Sir, as I have been many years master, I consider the forementioned rules for measuring ships the most feasible of all, and would meet the requirements of our merchant navy.

Yours, &c.
(signed) *R. Griffiths*,
Master and Owner of Brig "*Sybil Wynn*,"
Carnarvon.

Secretary, Marine Department,
Board of Trade.

— No. 301. —

(M. 15,848.)

Messrs. *Jas. Currie & Co.* to Board of Trade.

Sir, 34, Bernard-street, Leith, 23 November 1874.

Mr. Alexander Blackwood has handed us your communication* to him of 20th instant, regarding the "*North Star's*" draught of water, M. (—).

The "*North Star*" arrived at Copenhagen in due course. We do not consider her deeply laden; she had a lighter cargo than on many former voyages, and less draught of water than that prescribed by her captain.

We do not load our steamers with reference to their clear side at the lowest point, but to a draught based on our experience of the ship, the cargo, the voyage, and the season, confirmed by the judgment of the captain. When we have thus fixed the weight of cargo to be carried, and consequently the mean draught of the vessel, we allow considerable latitude to our captains in regard to the stowage and trim of the ship; and they invariably prefer to have the vessel about three feet, or even more, by the stern, as they find this trim makes easier and drier sea-boats in the short seas of the German Ocean.

You will see, therefore, that the records of freeboard sent to you, even when accurate, are misleading, as they ignore the *mean* draught, which alone determines

* This refers to the ordinary Circular. *See* Appendix (B.).

mines the displacement, and conveys the erroneous idea that a vessel is deeply loaded, when it is simply a question of the disposition of a reasonable weight of cargo in such manner as to put the vessel into that trim which experience has shown to be most conducive to the comfort and safety of crew and ship.

We are, &c.

The Assistant Secretary, (signed) *Jas. Currie & Co.*
Marine Department, Board of Trade.

P.S.—We may add that the owners of the "*North Star*" are their own underwriters.

J. C. & Co.

— No. 302. —

(M. 16,827.)

Messrs. *Steel, Young & Co.* to Board of Trade.

Steamer "*Glendale.*"

27, Leadenhall-street, London,
Sir, 15 December 1874.

In reference to your letter of the 21st ultimo* to our Mr. George Steel, West Hartlepool, we beg to say that we do not consider this steamer on leaving Cardiff for Malta on the 18th ultimo was too deeply laden; we do not know whether the measurements given in your letter are correct, but assuming them to be so, when the difference of buoyancy between the Cardiff Dock water and the sea water outside is taken into account, the vessel would rise six inches, at which side we consider her perfectly safe. From a letter received from the master yesterday from Malta, dated 3rd December, he describes the passage as a middling good one, although they experienced a heavy gale after leaving, but received no damage whatever.

We are, &c.

The Assistant Secretary, (signed) *Steel, Young & Co.*
Marine Department, Board of Trade.

— No. 303. —

(M. 16,827.)

Board of Trade to Messrs. *Steel, Young & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
Gentlemen, 24 December 1875.

With reference to your letter of the 15th instant, relative to the loading and voyage of the steamship "*Glendale,*" and stating that you do not know whether the measurements given in this Board's letter of the 21st ultimo are correct, I am directed by the Board of Trade to inform you that, looking to the report of their surveyor on this matter, they see no reason to doubt the accuracy of his measurements on the occasion referred to.

I am, &c.

Messrs. Steel, Young & Co., (signed) *R. G. C. Hamilton.*
27, Leadenhall-street, E.C.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 304. —

(M. 15,974.)

Messrs. *J. Marychurch & Co.* to Board of Trade.

Sir, Cardiff, 26 November 1874.

In reply to your favour of yesterday* respecting the "*John Boyle*," if this boat was measured it would be in fresh water, and she would rise considerably when outside; in addition to this she is a boat of considerable sheer, and we consider her perfectly fit in every respect to make her intended voyage.

Yours, &c.

The Assistant Secretary, Board of Trade. (signed) *J. Marychurch & Co.* per *W. F. Richardson.*

— No. 305. —

(M. 16,038.)

Messrs. J. *Marychurch & Co.* to Board of Trade.

Sir, Cardiff, 27 November 1874.

In reply to yours of yesterday,* we were under the impression that the draught of water was properly marked fore and aft on steamship "*John Boyle.*" However, on this steamer's return we will at once look into the matter.

Yours, &c.

The Assistant Secretary, Marine Department, Board of Trade. (signed) *J. Marychurch & Co.* per *W. F. Richardson.*

— No. 306. —

(M. 15,974.)

Board of Trade to Messrs. *J. Marychurch & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens, 1 December 1874.

Gentlemen,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 26th ultimo, relative to the loading of the steamship "*John Boyle*," and in reply to state that they will be glad to be informed how that vessel makes her present voyage.

I am, &c.

Messrs. J. Marychurch & Co., Steamship Owners, Cardiff. (signed) *Thomas Gray.*

— No. 307. —

(M. 16,365.)

Messrs. *J. Marychurch & Co.* to Board of Trade.

Sir, Cardiff, 3 December 1874.

In reply to your favour of 1st instant, we beg to advise you that the "*John Boyle*" arrived at Civita Vecchia yesterday, all well.

Yours, &c.

The Assistant Secretary, Board of Trade. (signed) *J. Marychurch & Co.*, per *W. F. Richardson.*

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 308. —

(M. 16,178.)

Mr. *H. Nicholson* to Board of Trade.

Sunderland, 1 December 1874.

Sir,

I DULY received your letter of the 25th November,* respecting the sailing of the steamship "*Sunniside*" from Cardiff for Marseilles.

I am not aware that she was deeply laden, and I do not think the captain would put his vessel too deep, as the quantity of cargo to be carried is left to his discretion; and, with the side you mention in Cardiff Docks, being fresh water, I should not consider the steamer too deep, as she would swim four inches lighter when she got to sea into salt water.

However, the "*Sunniside*" arrived at Marseilles yesterday morning, being nine days and six or eight hours from Cardiff, and from her making the passage in this time I should say she was in good seagoing trim when she left Cardiff.

I am, &c.

(signed) Per pro *R. T. Nicholson*,
H. Nicholson.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 309. —

(M. 16,561.)

Mr. *Andrew Dunn* to Board of Trade.

Steamship "*Stagshaw*."

52, Dock-street, Monkwearmouth, Sunderland,
7 December 1874.

Sir,

THE enclosed has been handed to me,* and I am requested to answer it. All I have to say is that the steamer has performed the voyage satisfactorily, and was not, in my opinion, deeply laden, as herein stated.

Yours, &c.

Thomas Gray, Esq. (signed) *Andrew Dunn*, Master.

— No. 310. —

(M. 16,681.)

Messrs. *Henderson Brothers* to Board of Trade.

The "Anchor" Line of Transatlantic, Peninsular,
and Mediterranean Steam Packet Ships,
45 & 47, Union-street, Glasgow,
11 December 1874.

Sir,

WE duly received your communication of 8th instant,* with reference to the "*Dorian*," and have to state, in reply, that this vessel arrived at Lisbon yesterday all well, having made the passage under six days, notwithstanding that the weather she experienced was unusually severe.

We understand that your surveyor, in ascertaining the clear side of such vessels as the "*Dorian*," makes no allowance for their special construction, but treats them exactly as flush ships, and as if they were uncovered either fore or aft, thus creating a false impression as to their seaworthiness when the clear side is measured from the lowest part of the main deck amidships.

We

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* This refers to the ordinary Circular. *See* Appendix (B.).

We therefore think it right to explain that the "*Dorian*" has a topgallant forecastle, 50 feet long and 6 feet high, which is completely covered in, and a full poop deck, 100 feet in length and 3 feet 6 inches high, so that the space where water can lodge on the main deck is very limited indeed.

It does not, therefore, appear fair or reasonable that these facts should be overlooked in reporting the state in which the vessel is sent to sea.

It should also be borne in mind that the measurements given by your surveyor are taken while our vessels are in fresh water.

The "*Dorian*," when she left Glasgow, had no list, and we may add that we make it our business to see that all our vessels are properly laden, and that they are sent to sea in a thoroughly seaworthy state.

We have never had any communication from the Board of Trade with reference to the draught of our larger classed vessels, which shows that their views and ours are not at variance as regards loading generally, and we believe the facts we refer to explain the cause of the communications that we from time to time receive regarding our smaller classed vessels.

We are, &c.
(signed) *Henderson Brothers,*
Per *T. G. Anderson.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 311. —

(M. 16,806.)

Messrs. *Watts, Milburn & Co.* to Board of Trade.

Sir, Newcastle-upon-Tyne, 14 December 1874.

YOUR favour of the 11th instant* duly to hand, *re* steamship "*Maharajah*," and in reply we shall be glad to inform you, on her arrival at Constantinople, how she has performed her voyage with the said clear side of 3 feet starboard and 2 feet port.

We are, &c.
(signed) Pro *Watts, Milburn & Co.*,
Jas. S. Walton.

The Assistant Secretary,
Board of Trade.

— No. 312. —

(M. 17,083.)

Messrs. *John Fenwick & Son* to Board of Trade.

Sir, 44, Coal Exchange, London, 21 December 1874.

WE have to acknowledge receipt of your letter of the 12th December, M. (—),* acquainting us that the Board of Trade has been informed that the steamship "*Northumbria*," of Newcastle, sailed from the port of North Shields with coals, for London, on the 9th instant, having a clear side of only 2 feet 5 inches starboard, 2 feet 7 inches port, and that the Board of Trade are advised that, with the clear side above indicated, the vessel was deeply laden, and will be glad to be informed how she makes the voyage in question, and whether she is usually so deeply laden as is reported.

In reply, we beg to state:—

That the master of the steamship "*Northumbria*" does not admit the correctness of the information furnished to the Board of Trade, and especially that his vessel was "improperly laden."

That the steamship "*Northumbria*" made her voyage as usual, and safely arrived at her destination.

That the masters of our steamers have instructions to never "improperly" load their steamers, and we have no reason to suppose they ever do so.

We are, &c.
(signed) *John Fenwick & Son.*

The Assistant Secretary,
Marine Department, Board of Trade.

The master of the "*Northumbria*" reports that the Board of Trade surveyor measured

* This refers to the ordinary Circular. *See* Appendix (B.).

measured the "*Northumbria's*" side about noon on the 9th instant, at which time she had 40 tons of water ballast in her midship water-ballast tank, and that the vessel did not sail until between 3 and 4 p.m., by which time the ballast tanks were pumped dry, and the vessel had more side than that indicated by your surveyor.

— No. 313. —

(M. 16,950.)

Messrs. *J. Young, Ehlers & Co.* to Board of Trade.

32, Great St. Helen's, London,
Sir, 17 December 1874.

Mr. James D. Hill, of the Coal Exchange, has handed your letter of the 12th instant* to us, as managers of steamship "*Dora*," and in reply we have to state that in the instance referred to we do not consider the "*Dora*" was deeply laden, as this vessel has great sheer and a large poop, hurricane house and topgallant forecastle, and iron decks; and further, the captain and officers always report her to be a very good sea boat.

We are, &c.
(signed) Per pro *J. Young, Ehlers & Co.*,
The Assistant Secretary, *Jas. E. Drew.*
Marine Department, Board of Trade.

— No. 314. —

(M. 17,116.)

Messrs. *R. Byrne & Co.* to Board of Trade.

137, Fenchurch-street, London, E.C.
Sir, (and at Cardiff), 21 December 1874.

In reply to your letter, dated the 19th,* and received this morning, respecting the "*Thornaby*," we beg to inform you that we specially instructed the captain not to take more than prudent at this time of the year, and she has not on board more than the quantity she has before taken.

We shall advise you as to the voyage she makes on hearing of her arrival, but we do not expect advice before she gets to Port Said, as she has not to make any call in the meantime.

We are, &c.
The Assistant Secretary, (signed) Per pro *R. Byrne & Co.*
Marine Department, Board of Trade. *R. Byrne.*

— No. 315. —

(M. 16,936.

Messrs. *John M. Lennard & Son* to Board of Trade.

Sir, Middlesbro'-on-Tees, 17 December 1874.

In reply to your circular of yesterday's date,* we may remark that the steamship "*Huntcliffe*" arrived at her destination on both voyages referred to, without loss or damage of any description.

Some months since we sent you the enclosed tracing by a deputation from here; by it you will observe again that this vessel has been laden with 500 tons of cargo and bunkers on a mean draught of 12½ feet.

Having engines and bunkers aft, this vessel must necessarily be kept 1½ feet or 2 feet by the stern when loaded here, otherwise when reaching her port of destination she would be down by the head and totally unmanageable.

Instead of loading the full quantity of cargo above indicated, on a mean draught of 12½ feet, we prefer to leave out about 40 tons forward, so as to keep the vessel in proper seagoing trim, and never have had a single complaint from either captains or seamen that the vessel was overladen; we are now loading above 430 tons

* This refers to the ordinary Circular. *See* Appendix (B.).

430 tons cargo, and 25 to 30 tons bunkers, and consider, owing to her peculiar construction, that there is not a boat leaving the Tees in better seagoing trim.

We have in previous letters called your attention to the quantity of fresh water in the Tees, and vessels float from 3 to 5 inches lighter outside than here; and when your surveyor measured this vessel she was lying weather-bound in entirely fresh water, and ebb tide; in fact, we don't think there was any flood that day at Middlesbro'. Assuming that the clear side indicated in your surveyor's report to have been 1 foot 3 inches in the very lowest section, this would give 1 foot 7 inches by the time the vessel crossed the bar.

We remain, &c.
(signed) *John M. Lennard & Son.*

P.S.—Having the tracing before you, it is hardly necessary to point out that this vessel, having a good deal of sheer, has very high ends, when at the lowest point of immersion amidship.

Please return the tracing when noted, and oblige.

— No. 316. —

(M. 16,939.)

Messrs. *John M. Lennard & Son* to Board of Trade.

Middlesbrough-on-Tees,
Sir, 17 December 1874.

In reply to your circular of yesterday,* if the "*Louise of Lorne*" had only the side mentioned by your surveyor, it was owing to her lying in entirely fresh water, as she had only her usual quantity of cargo on board, same as was left in her when she was detained and surveyed by your orders last winter, and at that time we instructed the captain never to allow the draught to be exceeded.

She did not complete the voyage in question as she got ashore in a snow storm shortly after leaving here, of which we have already advised you.

We remain, &c.
(signed) *John M. Lennard & Son.*

— No. 317. —

(M. 17,102.)

Messrs. *John E. Swan & Brothers*, Limited, to Board of Trade.

Dear Sir, Middlesbrough, Yorkshire, 19 December 1874.

We have your communication of 16th instant,* addressed to Glasgow, in reference to the steamship "*FitzWilliam.*"

In reply, we beg to say that she completed the voyage in question safely, and cannot assign any reason why she was deeper than formerly, as she had the usual cargo of 350 tons on board, without it was owing to the engineer having neglected to clear the bilges or tank before starting from the loading wharf; we have, however, given instructions to the engineer to be careful in future.

We are, &c.
(signed) *John E. Swan & Brothers*, Limited.
Robert Simpson, Manager.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 318. —

(M. 315/1875.)

Mr. *Willett* to Board of Trade.

Sir, Docks, Aberdeen, 6 January 1875.

In reply to yours of 4th instant,* in reference to the "*Josephine*," I beg to inform you that she has arrived at this place without any complaint from anyone.

She

* This refers to the ordinary Circular. *See* Appendix (B.).

She was never so deeply laden before. When I found fault with the master for loading her so deep, the excuse he made was that it was the fault of the trimmers, they having put so many coals into the after part of the ship that he was forced to put more into the fore part of her than he intended, to get the ship into her proper trim. Being a shipmaster myself, I am very much against overloading ships, and give instructions to all shipmasters that I have anything to do with not to load their ships so deep but what they may have confidence in them when at sea, that they are fit to get through any gale of wind. As the loading of ships is a peculiar point to deal with, and not having seen any instructions from the Board in reference to it, I would be much obliged if you can give me an idea what the requirements of the Board of Trade are in respect to the loading of ships. If it is the clear side, what is the difference between a ship that is sprung at both ends and a ship that is highest in midships. If it is the cubic contents of the floating power above water compared to that below, what is that cubic contents?

Yours, &c.
(signed) *J. I. Willett.*

To the Assistant Secretary,
Board of Trade.

— No. 319. —

(M. 1816/1875.)

Mr. *G. Jones* to Board of Trade.

Dear Sir, Portmadoc, 2 Februa y 1875.

In reply to your inquiry dated the 5th January 1875,* respecting the draught of water of the schooner "*Anne Holland*" of Carnarvon, which sailed from North Shields with coals for Waterford on the 26th December 1874, I have to inform you that the ship worked well with the clear side mentioned, and that she is usually so deeply loaded.

I am, &c.
(signed) *Guppett Jones,*
Master.

Thomas Gray, Esq., Board of Trade.

— No. 320. —

(M. 6133.)

Mr. *S. Plimsoll,* M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 20 April 1875.

A REFERENCE to the "Records of Draught of Water," of the 15th, 16th, and 17th of April, appears to indicate the following cases of overloading; namely, the "*Camel,*" which left Cardiff on the 14th instant, "very deep"; that is with a freeboard of only 8½ inches to a depth of hold of 9 feet; the "*Criterion,*" the "*Success,*" and the "*Temon,*" which sailed from North Shields (which I have frequently characterised as an offending port) on the 13th instant, all, apparently, overladen. The "*Nautilus,*" which left Cardiff on the 15th, was, according to the figures supplied by the "Record" of the 16th, "deep." On the 14th the "*Alfgar*" and the "*Berwick*" left a port which, in the "Record" of the 16th reads like "*Netherlands,*" manifestly "deep"; and on the 15th the "*Clio*" sailed from Swansea, "very deep." On the 16th the "*Kynance*" left Cardiff, "very deep," and not for the first time; and the "*Bertha*" left Glasgow with an inadequate clear side. On the same day the "*Northumbria*" sailed from North Shields, "deep," and with a list, and the "*Royal Eagle*" left Swansea, "very deep."

I am, &c.
(signed) *Samuel Plimsoll,*
per *Charles P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade Reply, *see* Appendix (A.)

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 321. —

(M. 6477.)

Mr. *James Humphrey* to Board of Trade.

Steamship "*Berwick.*"

Sir, Exchange, Sunderland, 27 April 1875.

Your letter of the 20th instant,* addressed to Sir George Elliot, Bart., M.P., has been handed to me respecting the above steamer, and in reply thereto I beg to state that she was more deeply laden than usual through some of the water ballast not having been pumped out, but which was done as soon as steam was got up, and this was the means of lightening the steamer about 7 inches, thus giving her a clear side of 2 feet 6½ inches, with which she made a very quick and successful voyage.

I am, &c.

Thomas Gray, Esq., (signed) *James Humphrey.*
Marine Department, Board of Trade.

— No. 322. —

(M. 6110.)

Messrs. *Watts, Milburn & Co.* to Board of Trade.

Draught of Water.—"*Criterion*" Steamship.

Dear Sir, Newcastle-upon-Tyne, 20 April 1875.

We are in due receipt of your inquiry* in reference to draught of water for this steamer, on leaving Tyne for Galatz. In reply, we beg to say that we made special arrangements with captain to have her *not* so deep as usual. Her draught on leaving was, forward, 15 feet 8 inches, and aft, 17 feet 8 inches; whereas her usual depth of water is, forward, 15 feet 10 inches, and aft, 17 feet 10 inches. However, we shall be glad to inform you how she performs her voyage. Meantime,

We are, &c.

(signed) Pro *Watts, Milburn & Co.*,
James S. Walton.

Thomas Gray, Esq.,
Marine Department, Board of Trade.

— No. 323. —

(M. 7191.)

Messrs. *Watts, Milburn & Co.* to Board of Trade.

Draught of Water.—"*Criterion*" Steamship.

Dear Sir, Newcastle-upon-Tyne, 10 May 1875.

As requested, we now beg to inform you that this steamer arrived at her destination (Galatz) on the 6th instant, all well.

Yours, &c.

(signed) Pro *Watts, Milburn & Co.*,
James S. Walton.

The Secretary, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 324. —

(M. 6206.)

Mr. *E. Handcock* to Board of Trade.

Sir, Falmouth, 22 April 1875.

In reply to yours of the 20th,* the "*Kynance*" arrived safely at Sables; she was in her usual trim. The side you quote was just before the half poop; she has also a great deal of spring; is a very good sea boat; very strongly built; not a gingerbread craft.

Yours, &c.

The Assistant Secretary, (signed) *Edmund Handcock.*
Marine Department, Board of Trade.

— No, 325. —

(M. 6412.)

Messrs. *John Fenwick & Son* to Board of Trade.

44, Coal Exchange, London,

Sir, 26 April 1875.

We have to acknowledge receipt of your letter* of the 21st instant, acquainting us that the Board of Trade has been informed that the steamship "*Northumbria*" of Newcastle sailed from the port of North Shields with coals for London, on the 16th instant, having a clear side of 3 feet 1 inch starboard, 2 feet 6 inches port, and that the Board of Trade are advised that with the list above indicated the vessel was improperly laden, and will be glad to be informed how she makes the voyage in question, and whether she is usually so improperly laden, as is reported.

In reply, we beg to state that the master of the steamship "*Northumbria*" does not admit the correctness of the information furnished to the Board of Trade, and especially that his vessel was "improperly laden."

That the steamship "*Northumbria*" made her voyage as usual, and safely arrived at her destination.

That the masters of our steamers have instructions to never "improperly" load their steamers, and we have no reason to suppose they ever do so.

We are, &c.

The Assistant Secretary, (signed) *John Fenwick & Son.*
Marine Department, Board of Trade,

— No. 326. —

(M. 6243.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 22 April 1875.

The "Record of Draught of Water" of the 19th instant, supplies the following cases of apparent overloading, to which I beg to direct your attention:—The "*Redesdale*," which sailed from Glasgow on the 17th instant, "deep," and the "*Silvery Wave*," from Swansea, on the same day, in like condition. On the 17th, likewise, the "*Maria Louisa*," the "*Hilda*," and the "*Charles Tennant*," left North Shields, the first-named "deep," and the others "very deep." Moreover, I observe that the "*Foam*" sailed from Middlesbro' on the 16th instant, with

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* This refers to the ordinary Circular. *See* Appendix (B.).

with a mean clear side; there was a list to starboard of 10 inches, of only 1 foot 1 inch, as against a depth of hold of 14 feet $3\frac{10}{11}$ths.

This vessel was bound for Dantzic with a cargo of pig-iron and iron pipes.

I remain, &c.
(signed) *Samuel Plimsoll,*
per *Charles P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.).

— No. 327. —

(M. 6400.)

Mr. *H. Bee* to Board of Trade.

Dear Sir, Office, Docks, Southampton, 26 April 1875.

I AM in receipt of your impression* of the 22nd instant, that my vessel, "*Silvery Wave,*" of London, sailed from Swansea deeply laden. She arrived here yesterday from that port after a six days' passage, having left with a fine easterly breeze, which continued all the passage. The ship behaved remarkably well in every way. Her freeboard amidships was 1 foot 9 inches, and her draught of water aft, 14 feet; forward, 12 feet 6 inches. Her freeboard, from the deck aft 4 feet 3 inches, with poop over 3 feet 2 inches; forward, 6 feet.

This vessel has a sheer of about 3 feet 6 inches; was built in Lincolnshire, and is very much after the model of the Yorkshire billybuoys with flat bottom.

She has on board at present about 330 tons of coals.

Yours, &c.
(signed) *Henry Bee.*

The Assistant Secretary,
Marine Department, Board of Trade.

P.S.—I omitted to state in the first part of this, that Sir C. Wheatstone was her former owner, and that he forwarded me on your communication.

H. B.

— No. 328. —

(M. 6375.)

Mr. *Mark Snell* to Board of Trade.

Dear Sir, Town Hall, Hull, 24 April 1875.

I HAVE to acknowledge the receipt of your letter* of yesterday, and in reply, judging from the dead weight cargo of the "*Hilda,*" she was not more deeply laden than usual. I had a telegram from Copenhagen showing she had made her passage in an unusually short time.

She is a vessel with very bold ends, long poop, and foregallant forecastle, and will load safely with much less freeboard than many steamers.

Yours, &c.
(signed) *Mark Snell.*

Thomas Gray, Esq.,
Assistant Secretary, Marine Department.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 329. —

(M. 6286.)

Messrs. *Watts, Milburn & Co.* to Board of Trade.

Draught of Water.—"*Charles Tennant.*"

Sir, Newcastle-upon-Tyne, 23 April 1875.

In reply to your inquiry,* dated yesterday *re* this steamer, we beg to say that it is about the usual draught of water; she has, however, been deeper than she is at present, having in February last been, forward, 16 feet 10 inches, and aft, 17 feet 2 inches; she arrived at Havre (her destination) all well, on the 20th, having made a very fair passage.

We are, &c.

The Assistant Secretary, (signed) pro *Watts, Milburn & Co.*,
Marine Department, Board of Trade. *James S. Walton.*

— No. 330. —

(M. 6210.)

Messrs. *Pyman, Watson & Co.* to Board of Trade.

Sir, Newport, Monmouth, 22 April 1875.

Your favour of yesterday* is duly to hand. We are glad to say the "*Foam*" arrived at Danzig yesterday, all well, after a passage of the usual duration.

We do not know the vessel's draft, as the captain has neglected to send us our usual form, giving quantity of cargo, and fuel, and draft, time occupied in loading, &c., the last of which we enclose for your inspection.

We are, therefore, unable to verify your report of the vessel's clear side and ist, and can only say that if correct, you are quite right in describing her as deeply and improperly laden.

Our orders to captain are that she has never to be loaded below 14 ft. 10½ in. mean draught, the draught given us by her builders, and this has never before been exceeded.

We can only account for the captain's having loaded her so deeply in this way:—

The vessel has been nearly a month in Middlesborough repairing; when she was nearly ready to load, we instructed shippers to give her 700 to 720 tons cargo, and 150 tons fuel.

The shippers then informed us that the captain had some time previously told them she would carry 760 to 780 cargo, and they had accordingly sent off by other vessels all the cargo they had to send except 760. We replied that under the circumstances she would have to carry the 760 tons cargo, and reduce the quantity of bunkers to 100 or 110 tons, and we wrote the captain (who is very inexperienced) at the same time, complaining that he had exceeded his authority in naming the vessel's cargo without consulting us, and pointing out the loss that would be occasioned to us in consequence, by our having to buy coals abroad to steam the vessel home.

Being a young man whom we have just promoted from the rank of mate to that of captain, we fear he has, from a mistaken idea that it would please us, taken more than the quantity of bunker coal named by us; but as we have not yet received the invoice from shippers, we do not know exactly what she has taken.

We regret exceedingly that you should have had reason to complain, and shall take care that it does not occur again.

Yours, &c.

(signed) *Pyman, Watson & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

Enclosure in No. 330.

ACCOUNT of Time Occupied in Loading or Discharging S. S. "*Foam*," at Huelva.
7th Voyage, 24 February 1875.

Date of Arrival.—Thursday, 18th, 10 a.m.
Date when Commenced to Load.—Monday, 22nd, 4.30 p.m.
Date when Loaded.—Wednesday, 24th, 9 a.m.
Hours in Loading.—40½.
Cargo received.—760½ Spanish tons = 749 English tons.
Draught of Water Forward.—14 ft. 3 in.; aft, 15 ft. 7 in.
Date of Sailing.—Wednesday, 24th, 2.30 p.m.

(signed) *J McDonie*, Master.

— No. 331. —

(M. 6377.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 24 April 1875.

THE "Records of Draught of Water" of the 21st, 22nd, and 23rd instant, suggest some cases of apparent overloading, to which I venture to call your attention. Thus, on the 19th instant, the "*Redesdale*" seems to have sailed from Glasgow "deep"; the "*Wells*" to have left Hull, on the 16th, for Dantzig, "very deep," and the "*Marie Ange*" sailed from Swansea deeply laden. Cardiff, on the 20th instant, furnished a similar case in the "*Ella Constance*," and Greenock another, on the 19th, in the "*Sheldrake*." On the 20th, the "*Prioress*" sailed from Swansea for Barcelona, "deep," whilst on the 21st, the '*Commodore*" and the "*Constantine*" left North Shields, "deep," the latter having likewise a bad list. On the same day the "*Camel*" sailed from Cardiff, "very deep," and the "*Henry Bolckow*" from Sunderland for Bordeaux, with a list of no less than 1 foot 6½ inches.

I am, &c.

The Assistant Secretary, (signed) *Samuel Plimsoll*,
Marine Department, Board of Trade. Per *Charles P. Robert*.

(For Board of Trade reply, *see* Appendix A.).

— No. 332. —

(M. 6473.)

Mr. *James Walton* to Board of Trade.

Steamship "*Constantine*."

85, Gracechurch-street, and Coal Exchange,

Dear Sir, London, 27 April 1875.

REFERRING to your letter* of the 23rd instant (M.), and the draught of water of above steamship, showing a list of 8 inches, I beg to inform you (being managing owner in lieu of Charles Mitchell, to whom your letter is addressed), that the said steamer did not leave the port of North Shields with the list named, and that she made her passage from the Tyne to London in 31½ hours, and was not improperly laden; the above steamer had the list in dock after being loaded; his was caused by water left in one of the ballast tanks, which was pumped out immediately steam was raised before leaving the dock. If there is any further information required about this, please address me, Bebside Coal Company, Newcastle-on-Tyne.

I remain, &c.

Thomas Gray, Esq., Board of Trade. (signed) *James Walton*.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 333. —

(M. 6480.)

Mr. *S. Plimsoll,* M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 27 April 1875.

I BEG to direct your attention to some apparent cases of overloading, shown by the "Records" received this morning. By that of the 23rd instant, I find that on the previous day the "*Damietta*" and the "*Agnes Wyllie*" left Middlesbro', "very deep;" whilst the "Record" of the 24th shows that the "*Northumbria*" and the "*Athelstane*" sailed from North Shields "deep" on the 22nd, and the "*Vanguard*" in like condition, from the same port, on the following day. There must, I presume, be some mistake in the clear-side given to the "*Dahlia,*" which left the port of London on the 22nd instant.

I remain, &c.

The Assistant Secretary, (signed) *Samuel Plimsoll,*
Marine Department, Board of Trade. Per *Charles P. Robert.*

(For Board of Trade reply, *see* Appendix A.).

— No. 334. —

(M. 7140.)

Messrs. *Henry Bucknall & Sons* to Board of Trade.

"Draught of Water."

22, Crutched Friars, E.C., London,

Sir, 8 May 1875.

IN reply to your communication* of 30th April respecting our steamship "*Vanguard,*" we beg to state that this vessel has completed 20 consecutive voyages with the same weight of cargo and the same draught of water; that she has never met with an accident of any kind; that she is a very *shallow* vessel, and would naturally require less freeboard than vessels of her tonnage drawing much more water; and that our naval architect informs us that when loaded, as at present (and as she always has been), she has a buoyancy equal to 25 per cent.

We consider it best to mention that we are our own underwriters to a heavy extent, and on no account should we like to run any unfair risks by overloading As soon as we hear of this ship's arrival at Barcelona we will inform you how she has performed the voyage.

You may consider it out of place, but we trust you will excuse us protesting against this arbitrary act of the officials at Newcastle. They do not seem to take into consideration if a vessel is thoroughly well built, first class, and doubly rivetted, as this ship is; but it is sufficient for them that she "looks deep," or that some one has complained about her (rightly or wrongly), to stop her, and cause her owners great annoyance and expense.

We feel sure we are only representing the feelings and opinions of hundreds of respectable shipowners when we say that they will be compelled either to relinquish their business or place their ships under foreign flags, in order to obtain common justice.

We are, &c.

(signed) *Henry Bucknall & Sons,*
Owners.

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 335. —

(M. 7653.)

Messrs. *Henry Bucknall & Sons* to Board of Trade.

22, Crutched Friars, E.C., London,
18 May 1875.

Sir,

Adverting to your communication of 30th April, we beg to inform you that the steamship "*Vanguard*" reached Barcelona on 7th instant, having made an average passage of about 13 days, without accident or casualty of any kind.

We are, &c.
(signed) *Henry Bucknall & Sons.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 336. —

(M. 6591.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

(Extract.)

Sir, 4, Victoria-street, 29 April 1875.

* * * * * *

Overloading.

The "Records of Draught of Water" of the 26th instant supplies two apparent cases of overloading; namely, that of the "*North Star*," which sailed from Leith on the 23rd, and the "*William Dawson*," which left Middlesborough for Antwerp, laden with pig iron, on the following day.

I remain, &c.
(signed) *Samuel Plimsoll*,
Per *Charles P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For the Board of Trade reply, *see* Appendix A.).

— No. 337. —

(M. 6757.)

Messrs. *James Currie & Co.* to Board of Trade.

Sir, 16, Bernard-street, Leith, 3 May 1875.

In reply to your circular* of 30th ultimo, we beg to say that the "*North Star*" sailed for Hamburg on the 23rd ultimo, drawing 12ft. 6in. forward, and 15ft. 6in. aft, and arrived at Hamburg in due course on the 26th ultimo. We reckon the clear side amidships, as is customary in applying the ordinary underwriters' rules for loading, and not at the lowest point, as practised by your surveyors, the latter method being illusory, and giving no reliable indication of the free displacement, which is the only true test of safety.

You do not indicate any standard for determining when a vessel is "deeply" loaded, and apparently take no account of the fact that the "*North Star*" has a full poop. We are in the habit of loading our ships according to the season of the year, the nature of the voyage, and our experience of the behaviour of the ships at sea, and with a due regard to the opinions of our captains.

We may add that the "*North Star*" is entirely uninsured.

We are, &c.
(signed) *James Currie & Co.*,
Per *J. W. Crawford.*

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 338. —

(M. 6712.)

Mr. *S. Plimsoll,* M.P. to, Board of Trade.

4, Victoria-street, S.W., 1 May 1875.

Sir,

A REFERENCE to the "Record of Draught of Water" of the 27th ultimo, shows me that on the 24th ultimo the "*Dorcas*" sailed from North Shields, apparently "deep," and certainly with a bad list to starboard. The "Record" of the 28th ultimo seems to show that the "*Martin Wiener*" sailed from the same port on the 26th ultimo deeply laden. On the following day the "*Rothesay*" left Cardiff "deep."

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I remain, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *Samuel Plimsoll,*
Per *Charles P. Robert.*

(For Board of Trade reply, *see* Appendix A.).

— No. 339. —

(M. 7125.)

Mr. *T. C. Stamp* to Board of Trade.

67, John-street, Sunderland,
8 May 1875.

Sir,

IN reply to yours * of the 1st instant respecting steamship "*Dorcas,*" she performed the voyage very well, being four days and five hours from the Tyne until she returned here. I heard after she sailed of her list and remonstrated with the master after his return; he said it occurred accidentally, but he thought the vessel quite seaworthy even as she was. I need hardly add your agents look after this vessel so well that they know she is not usually so laden.

I am, &c.

Thomas Gray, Esq.

(signed) *T. C. Stamp.*

— No. 340. —

(M. 6994.)

Mr. *S. Plimsoll,* M.P., to Board of Trade.

4, Victoria-street, S.W., 6 May 1875.

Sir,

A PERUSAL of the "Record of Draught of Water" of the 1st instant appears to show that on the 29th ultimo the "*H. D. Pochin*" and the "*Douglas*" sailed from North Shields very deeply laden, and the latter with a list of 9 inches to starboard. Again, the "Record" of the 4th instant gives the departure of the "*Fairfax*" from Cardiff for Brindis, with a clear side of only 1 foot 11½ inches, to a depth of hold of 15 feet 9-10ths inches, a disproportion which, without some countervailing elements of safety, would render the voyage of that vessel a dangerous experiment. On the same day the "*May Queen*" seems to have left the same port deeply laden, and on the 3rd instant the "*Stentor*" sailed in like condition. On the 1st instant I find that the "*Bentinck*" left Swansea for Marseilles, with a clear side of 1 foot 9 inches, to a depth of hold of 16 feet 1-10th inches; that on the same day the "*Hilda,*" laden with pig iron, sailed from Middlesborough, with a very bad list to starboard, and that the "*Raithwaite Hall*" left North Shields "very deep." On the previous day the "*Cramlington*" appears to have sailed from the last-named port deeply laden.

I remain, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *Samuel Plimsoll,*
Per *Charles P. Robert.*

(For Board of Trade reply, *see* Appendix A.).

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 341. —

(M. 6907.)

Messrs. *Pyman, Bell & Co.* to Board of Trade.

Dear Sir, Newcastle-on-Tyne, 5 May 1875.

Your favour of 4th instant, with regard to depth of water for "*Douglas*," is to hand. This vessel arrived at Swinemunde, all well, yesterday; and we do not consider, with the side she had, that she was too deeply laden.

We remain, &c.

The Assistant Secretary, (signed) *Pyman, Bell & Co.*
Marine Department, Board of Trade.

— No. 342. —

(M. 7026.)

The *Whitehaven Shipbuilding Company* (Limited) to Board of Trade.

Steamship "*Bentinck*."

Sir, Whitehaven, 7 May 1875.

We have to acknowledge receipt of your favour* of yesterday to Mr. Robertson of this town, in reference to draught of water of the above steamer from Swansea to Marseilles on 1st instant, and will be glad to communicate with you on the subject on hearing from the captain. We may however remark that according to the draught given us by the captain, viz., 16 feet aft, and 15 feet forward, she would have a freeboard of 2 feet 4 inches measured on midships section of the vessel.

Yours, &c.

The Assistant Secretary, (signed) *James Hamilton,*
Board of Trade. Secretary.

— No. 343. —

(M. 7210.)

Messrs. *Pyman, Bell & Co.* to Board of Trade.

Steamship "*Raithwaite Hall*."

Dear Sir, Newcastle-on-Tyne, 10 May 1875.

We are duly in receipt of your favour* of the 6th instant, *re* draught of water of the above boat, and in reply we beg to say that we do not consider that she was in any manner too deeply laden.

She arrived safely at Danzig, her port of destination, after a good passage, during which no mishap occurred.

Without further to add, we beg to subscribe ourselves,

Yours, &c.

The Assistant Secretary, (signed) *Pyman, Bell & Co.*
Marine Department, Board of Trade.

— No. 344. —

(M. 7291.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 11 May 1875.

The "Records of Draught of Water" of the 5th, 6th, 7th, and 8th instant, now before me, appear to supply some cases of overloading, to which I venture to

* This refers to the ordinary Circular. *See* Appendix (B.).

to draw your attention. Thus, on the 5th instant, I find that the "*Sixty Six*" left Middlesborough, for Rotterdam, laden with iron rails, "deep." The "Record" of the 7th instant seems to furnish three cases; those of the "*Haswell*," the "*Emma Trechmann*" and the "*Blytheswoode*," which sailed from North Shields, the first two "deep," and the third "very deep." The "*Emma Trechmann*," I should add, was bound for Malaga, and the "*Blytheswoode*" for Malta. Again, the "Record" of the 8th instant appears to indicate that on the 7th, the "*Osborne*" sailed from Leith very deeply laden, as a clear side of only 1 foot 10 inches is shown against a depth of hold of 14 feet 1-10th inch. Finally, the "*Servantes*" appears to have left North Shields on the 7th instant very deeply laden. I avail myself of this opportunity to acknowledge receipt of your eight (8) letters of the 10th instant, in reply to mine of the 17th, 22nd, 24th, 27th, and 29th ultimo, and 1st, 4th, and 6th instant.

I remain, &c.
(signed) *Samuel Plimsoll*,
Per *Charles P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.).

— No. 345. —

(M. 7598.)

Messrs. *Watts, Milburn & Co.* to Board of Trade.

Draught of Water.—"*Blytheswoode*."

Newcastle-upon-Tyne, 17 May 1875.

Sir,

We have your inquiry,* *re* the draught of water of this steamer on her sailing from Shields for Malta, and in reply beg to say that she was no deeper loaded than usually she loads. We will give you an account of how she performs her voyage, on her arrival at Malta. Meantime,

Yours, &c.
(signed) Pro *Watts, Milburn & Co.*,
James S. Walton.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 346. —

(M. 7967.)

Messrs. *Watts, Milburn & Co.* to Board of Trade.

"*Blytheswoode*."

Newcastle-on-Tyne, 25 May 1875.

Dear Sir,

We have received a telegram from Malta to say that this boat arrived on the 21st instant, and in accordance with ours of the 17th May, we now beg to acquaint you of same, your surveyor at this port having reported her too deep in the water. The telegram reported no accident on the passage, and we therefore infer that she has performed the voyage to the captain's satisfaction.

We are, &c.
(signed) Pro *Watts, Milburn & Co.*,
James S. Walton.

The Assistant Secretary,
Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 347. —

(M. 7440).

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 13 May 1875.

A PERUSAL of the "Record of Draught of Water," received this morning suggests the following observations: —The "*Llandaff*" appears to have sailed from Cardiff for Santander on the 7th instant, deeply laden; and the clear sides of the "*Bengal*" and the "*Vildosala*," which left that port on the same day, are not indicated. On the 7th, likewise, the "*Mary*" seems to have sailed from Hull "very deep," in which condition the "*Mino*," on the following day, apparently left Swansea, bound for Valentia, since she could only show a freeboard of 1 ft. 11 in. to a depth of hold of 16 ft.

I remain, &c.

The Assistant Secretary, (signed) *Samuel Plimsoll*,
Marine Department, Board of Trade. Per *Charles P. Robert*.

(For Board of Trade reply, *see* Appendix A.).

— No. 348. —

(M. 7710.)

Messrs. *Strong, Reid & Page* to Board of Trade.

Sir, Liverpool, 19 May 1875.

YOUR letter * of the 15th instant has only come to hand this morning.

In reply, the following is a copy of the telegram we received yesterday morning from the captain of the steamship "*Mino*," the steamer you are inquiring about:—

"Valentia, 17th, 10.40 A.M.

"From —— *Porter* to Messrs. *Strong, Reid & Page*, Castle-street, Liverpool.

"*Mino*" arrived this morning, all well. Cargo be out Friday."

We are, &c.

To Thomas Gray, Esq., (signed) *Strong, Reid & Page*.
Board of Trade.

— No. 349. —

(M. 7599.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 15 May 1875.

A REFERENCE to the "Record of Draught of Water" of the 11th instant, appears to show that on the previous day the "*Maggie*" left Swansea for Lisbon, very deeply laden. Her depth of hold is not indicated in the "Record," but her draught aft is given as 12 ft. 3 in., whilst her clear side was, only 1 ft. 6¼ in. This, I think, may be stated as a decided case of overloading. The "*Dorcas*," which sailed from Sunderland on the 10th instant seems to have been "very deep," though, being a vessel of considerable tonnage, she may possess elements of safety which the "Record" fails to show. In any case, it cannot be gainsayed that she had a dangerous list to port of 14 inches, which left her a mean clear side of only 1 foot 8 inches. The "Record" of the 12th instant, I may add, fails to indicate the clear side of the "*Sir H. Havelock*," which left Greenock on the 11th.

I remain, &c.

The Assistant Secretary, signed) *Samuel Plimsoll*,
Marine Department, Board of Trade. Per *Charles P. Robert*.

(For Board of Trade reply, *see* Appendix A.).

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 350. —

(M. 7673.)

Mr. *T. C. Stamp* to Board of Trade.

67, John-street, Sunderland,
19 May 1875.

Sir,

In reply to yours* of yesterday, I beg to say that your agent should have seen the "*Dorcas*" proceed to sea in the condition you name before he reported that she had actually done so. I remonstrated with the master about her list, and had her trimmed properly upright before she left the port. The mean between the sides is 1 foot 8 inches, this, with 3 inches added, would make her, as compared with a wooden-decked vessel, to 1 foot 11 inches side, and is only an inch less than a side of 2 feet, stated by a very competent authority to be sufficient for such a vessel as the "*Dorcas*" is; and I may here state that I am not afraid of any person who has either been, or now is, in her, being appealed to as to her seagoing qualities being of the first order, and that she is quite safe with even less than 2 feet side. Your agent was questioning the mate closely, who has only been in her a voyage or two; he could also inquire of Captain Palmer, of Argyle-street, Sunderland, who was in her during the winter for three months.

She arrived safely in Stettin on Sunday, after a very satisfactory run out.

I beg also to say that since I was advised 2 feet was sufficient side for this vessel, I have desired the master to keep her to this, so that if she is less at any time it will be against my orders.

I am, &c.
(signed) *T. C. Stamp*, Managing Owner,
Steamship "*Dorcas*."

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 351. —

(M. 7660.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W., 18 May 1875.

Sir,

Permit me to call your attention to two cases of overloading, shown in the "Record of Draught of Water" of the 14th instant. I refer, first, to the "*William Dawson*," which sailed from Middlesborough on the previous day for Rotterdam, laden with pig-iron, with a clear side of only 1 foot 5 inches, to a depth of hold of 11 feet 6-10ths inches; secondly, to the "*Winsloe*," whose departure from Cardiff took place on the 12th instant, when she could only show a freeboard of 2 feet to a depth of hold of 16 feet 4-10ths inches. The "*Winsloe*" was coal laden for Gibraltar. I take this opportunity of remarking, for the "Record" under notice suggests the observation, that the information afforded by your professional officers seems, in many cases, to be of a very imperfect character. Thus, I find the "*City of Brussels*," and the "*Princess Alice*" alone reported to have sailed from Liverpool on the 13th instant, whereas, in addition, the following vessels left that port on the same day:— the "*Amsterdam*," "*British Queen*," "*Britannic*," "*Cintra*," "*Constance*," '*Douro*," "*Gustava*," "*Hispania*," "*John Barbour*," "*Lorenza Sempren*," "*National Eagle*," "*Pallas*," "*Sarmatian*," "*Shahpore*," "*Sanspariel*," "*St. John*," "*W. L. Bradley*," and the "*Unicorn*." Besides the foregoing, the great majority of which are British, eight vessels sailed coastwise, but all are ignored in the "Record." May I ask whether the professional officers of your Board are instructed to report all departures, or only such as, in their discretion, they may deem fit?

I remain, &c.
(signed) *Samuel Plimsoll*,
Per *Charles P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.).

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 352. —

(M. 7749.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 20 May 1875.

I GATHER from the "Record of sDraught of Water," of the 15th instant, that on the previous day the "*Silbury*" and the "*Cæsarea*" sailed from Cardiff, coal laden for Barcelona, with inadequate clear sides. On the 14th, the "*Erimus*" appears to have left Middlesbro' "very deep," and on the same day I note the departure, deeply laden, of the "*Atlantic*" from Swansea; this vessel was bound with a cargo of coals for Valparaiso. On the following day the "*Jane Bacon*" seems to have sailed from the same port, far too "deep," for the "Record" of the 18th instant only shows her to have had a clear side of 1 foot 10½ inches to a depth of hold of 15 feet 4-10ths.

I remain, &c.
(signed) *Samuel Plimsoll*,
Per *Charles P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.).

— No. 353. —

(M. 7943.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 25 May 1875.

THE "Records of Draught of Water" of the 21st and 22nd instant, received this morning, point to some cases of overloading, to which I beg to call your attention. Thus, on the 20th instant, the "*Lottie*" appears to have sailed from Glasgow, coal laden for Alexandria, with a clear side of only 1 foot 11 inches, to a depth of hold of 18 feet. On the same day, I find that the "*Pensacola*" left Liverpool, for Callao, with a considerable list to port. Having regard, however, to her size this would probably not affect her stability. Nevertheless, it is a fact that in many cases these coal-laden vessels are badly trimmed. The "*German Emperor*" and the "*Ayton*," which sailed from Sunderland on the 20th instant were in the same plight, whilst the latter seems to have been "very deep," since she could only show a mean freeboard of 1 foot 6 inches, to a depth of hold of 14 feet 8-10th inches. In the "Record" of the 22nd, I notice that the clear side of the "*Margaret Banks*" is not given, and that the "*Galeed*" sailed from North Shields on the previous day, deeply laden.

I remain, &c.
(signed) *Samuel Plimsoll*,
Per *Charles P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.).

— No. 354. —

(M. 8314.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4 Victoria-street, S.W., 1 June 1875.

THE "Record of Draught of Water" of the 24th ultimo discloses some cases of overloading, to which I beg to draw your attention. Thus I find that on the 22nd ultimo the "*Lizzie*" sailed from Swansea for Belfast with a clear side of only 10½ inches, her depth of hold being 8 feet 8-10ths. Again, on the 21st ultimo, Cardiff furnished four cases of overloading, the "*Calypso*" and the "*Lady Maxwell*" having sailed "very deep, and the "*Corinth*" and "*Eugenie*" deeply laden. Passing on to the "Record" of the 27th ultimo, I

notice that the clear side of the "*Satellite*," which sailed from Greenock on the 25th ultimo, is not given. Otherwise the document offers no subject for comment.

I remain, &c.
(signed) *Samuel Plimsoll*,
Per *Charles P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 355, —

(M. 8445.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 3 June 1875.

From the "Record of Draught of Water" of the 28th ultimo, it appears that on the previous day the "*John Byng*" sailed from Cardiff, coal laden, for Barcelona, with a clear side of only 1 foot 5 inches to a depth of hold of 16 feet 4-10ths inches. The "Record" of the 31st ultimo fails to give the clear side of the "*Lizzie Gillespie*," which left Greenock on the 28th ultimo, and, as I mentioned in my letter of the 1st instant, the like information was withheld with regard to the "*Satellite*," which sailed from the same port on the 25th ultimo. The same "Record" shows that when the "*Lilydale*" left Swansea for Barcelona, with a cargo of patent fuel, she had a very bad list, and was deeply laden. On the 18th ultimo, I ventured to call your attention to the imperfect character of the information afforded by your professional officers, and gave some cases in point. At the same time I asked, "whether the professional officers of your Board are instructed to report all departures [of vessels], or only such, as in their discretion, they may deem fit?" I now beg to give some further cases illustrative of these omissions. The "Record" of the 27th ultimo, gives eight vessels as having sailed from Liverpool on the 26th, whereas there were 13. Again, on the 27th ultimo, 33 vessels left the same port, of which no more than three or four appear to have been foreign; yet the "Record" of the 28th ultimo only makes mention of 11. I could adduce other instances, but the above will suffice, and I content myself with repeating my question of the 18th ultimo, which you will, perhaps, have the goodness to answer.

I remain, &c.
(signed) *Samuel Plimsoll*,
Per *Charles P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 356. —

(M. 10,311.)

Mr. *S. Plimsoll*, M.P., to Board of Trade,

Sir, 4, Victoria-street, S.W., 13 July 1875.

On the 18th of May and 3rd of June last, I ventured to call your attention to the fact that, in many cases your professional officers failed to report the sailing, and the condition when they sailed, of vessels leaving ports under their charge. At the same time, I asked "whether the professional officers to your Board are instructed to report all departures, or only such, as in their discretion, they may deem fit?" As my question has remained unanswered up to the present time, I beg, in repeating it, to give a few cases in point, as furnished by the ports of Liverpool and Cardiff, in both of which your Board has professional representatives. With regard to Liverpool, I can find no trace in the "Records of Draught of Water" of the sailing from that port on the 7th instant, of the "*Diomed*," the "*Macedonia*," the "*American*," and the "*Felicia*," nor of the departure on the following day, of the "*Crimea*," the "*W. H. Harkess*," the "*J. F. Robertson*," and the "*Minerva*." Again, the following vessels left Cardiff on the 7th instant, but their

their names are not to be found in the reports of your professional officers:—The "*Almora*," the "*St. Andrew*," the "*Hera*," the "*J. Thompson*," and the "*Meteor*."

It is scarcely necessary for me to point out that constant omissions of this kind must deprive the "Records" of much of their value from the point of view of completeness.

I remain, &c.

The Assistant Secretary, (signed) *Samuel Plimsoll*,
Marine Department, Board of Trade, S.W. Per *Charles P. Robert*.

— No. 357. —

(M. 10,311.)

Board of Trade to Mr. *S. Plimsoll*, M.P.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
Sir, 21 July 1875.

With reference to your letter of the 13th instant, asking whether the officers of the Board of Trade report all departures of vessels or only such as they may deem necessary, I am directed by the Board of Trade to inform you that their officers do not report the draught of water of every vessel leaving any port where they may be on duty.

I am, &c.

S. Plimsoll, Esq., M.P., (signed) *Thomas Gray*.
4, Victoria-street, S.W.

— No. 358. —

(M. 8033.)

Mr. *John Bacon* to Board of Trade.

Bristol Channel, Swansea, Milford, Barnstaple, Llanelly,
and Wexford Steam Packet Offices,
Sir, 4, Rumford-place, Liverpool, 26 May 1875.

REPLYING to yours* of 21st instant, respecting the draught of water of steamship "*Jane Bacon*," I beg to say that, on the voyage referred to, the master reports to me that the ship was in excellent trim, and made a good voyage to Belfast, viz., 40 hours.

The mean draught was 15 ft. 2½in, and in the words of one of the crew, "she would go round the world" on it. I cannot say whether the "clear side" was as reported by your officers, but I beg respectfully to say that, in my opinion, the ship was not deeply laden.

I am, &c.

The Assistant Secretary, (signed) Pro *John Bacon*,
Marine Department, Board of Trade. *Joseph Wright*.

— No. 359. —

(M. 8580.)

Messrs. *Hinton Brothers & Co.* to Board of Trade.

80, Old Broad-street, London, E.C.,
Sir, 7 June 1875.

OUR steamship "*John Byng*" arrived at Barcelona "all well" yesterday (6th instant) at 10 a.m., and we have awaited this advice to acknowledge your communication of the 2nd instant.*

The boat had about her usual weight of cargo and bunker coal on board for her summer voyages, and the captain considered she was in very good trim at leaving. We think there must be an error of her having had only 1 ft. 5 in. clear side.

We are, &c.

The Assistant Secretary, (signed) *Hinton Brothers & Co.*
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 360. —

(M. 8580.)

Board of Trade to Messrs. *Hinton Brothers & Co.*

Draught of Water.

Board of Trade, Whitehall Gardens,
18 June 1875.

Gentlemen,

With reference to your letter of the 7th instant* respecting the loading of your vessel the "*John Byng*" on sailing from Cardiff on the 27th ultimo, I am directed by the Board of Trade to inform you that they have communicated with their surveyor on the subject, and have received a further report from him in which he confirms his previous statement in every particular.

I am to add that the surveyor informed the chief officer of the "*John Byng*" of the result of his measurements at the time they were taken.

I am, &c.
(signed) *G. J. Swanston.*

Messrs. Hinton Brothers & Co.,
80, Old Broad-street, E.C.

— No. 361. —

(M. 8787.)

Messrs. *Huntley, Berner & Co.* to Board of Trade.

West Hartlepool, 10 June 1875.

Sir,

In reply to yours of the 7th,* we were not aware that the steamship "*Lilydale*" was improperly laden when leaving Swansea for Barcelona. We should think it was the fault of the trimmers in giving the ship the list she had in trimming the cargo and bunkers. We think the captain would rectify this in a few hours after leaving by using the fuel from the bunkers that had the list.

The "*Lilydale*" arrived at Barcelona, all well, on the morning of the 8th instant.

We are, &c.
(signed) *Huntley, Berner & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 362. —

(M. 8101.)

Mr. *John S. Barwick* to Board of Trade.

Sunderland, 27 May 1875.

Sir,

Your communication* of yesterday received. I find on inquiry that the steamship "*Ayton*" was loaded two feet deeper aft., on the voyage in question than usual, which is accounted for by the engineers having left some of her water ballast in, but which would be pumped out immediately she got to sea. I may say that she made this voyage as usual in perfect safety.

Yours, &c.
(signed) *John S. Barwick.*

To the Assistant Secretary,
Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 363. —

(M. 8545.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
5 June 1875.

Sir,

Some cases of overloading appear to be shown in the "Records of Draught of Water," received this morning. That of the 3rd instant points to the "*Charlaw*" as having sailed from North Shields on the previous day, deeply laden. The same remark applies to the "*Abana*," which left that port on the 2nd instant. On the 1st, the "*Tasmanian*" sailed from Cardiff, for Rio de Janeiro, with a list to starboard of one foot, and the "*Raithwaite Hall*," the "*Martin Weiner*," and the "*Fenella*," seem to have been "deep" when they left Cardiff at the same date. Finally, I beg to call your attention to the "*Rayner*," whose departure from Cardiff, on the 31st ult., is noted in the "Record" of the 1st instant. That vessel could only show a clear side of 2 ft. 1½ in., to a depth of hold of 17 ft. 4 in.

I remain, &c.
(signed) *Samuel Plimsoll*,
Per *Chas. P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix, A.)

— No. 364. —

(M. 9038.)

Messrs. *Stephens, Kendrick & Mawson* to Board of Trade.

41, Quayside, Newcastle-on-Tyne,
16 June 1875.

Sir,

In reply to yours of 3rd instant,* we beg to say that the "*Rayner*" arrived at Brindisi on Sunday morning the 13th instant, making a wonderfully quick passage. The vessel was built to carry full cargoes, and we consider that she went out from Cardiff in a perfectly safe trim. The captain reports very favourably of the ship generally.

We are, &c.
(signed) *Stephens, Kendrick & Mawson.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 365. —

(M. 8637.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
8 June 1875.

Sir,

I beg to direct your attention to some apparent cases of overloading shown in the "Records of Draught of Water" received to-day. Cardiff, on the 3rd instant, furnishes, on the figures supplied by your professional officer, two cases in the "*Tyne Queen*" and the "*Pickwick*." The former sailed with a clear side of 1·35 to a depth of hold of 16 ft. 7-10ths, the latter with a freeboard of 2 ft. 4½ in., to a depth of hold of 17 ft. 5-10ths. By the same "Record" of the 4th instant, I see that the "*Canadian*" left Middlesbro' on the day previous, laden with pig-iron and coke, bound for Cronstadt. This vessel likewise appears to

* This refers to the ordinary Circular. *See* Appendix (B.).

to have been "very deep." On the 3rd instant, the "*Westella*" sailed from North Shields, coal laden, for Swinemünde, "very deep," and with a list, Finally, in the "Record" of the 5th instant, I note the departure, from Cardiff, of the "*Adria*." She was bound for Malta with a cargo of coals, and against a depth of hold of 17 ft. 3-10ths, could only show a clear side of 2 ft. 2 in., a proportion, I need hardly say, very inadequate to the requirements of safety.

I remain, &c.

The Assistant Secretary, (signed) *Samuel Plimsoll,*
Marine Department, Board of Trade. Per *Chas. P. Robert.*

(For Board of Trade reply, *see* Appendix A.)

— No. 366. —

(M. 8808.)

Mr. *S. Plimsoll,* M.P., to Board of Trade.

4, Victoria-street, S.W.,
Sir, 11 June 1875.

THE "Records of Draught of Water" of the 7th and 8th instant are to hand. In the former, I am happy to say, I can discover no case to which exception can be taken. The latter, however, discloses two instances of overloading, to which I venture to draw your attention. I refer to the "*Lady Havelock,*" which sailed from North Shields on the 7th instant, "very deep," and to the "*Osborne,*" which sailed on the same day from Leith, with what appears to have been an insufficient clear side, namely, 2 ft. 2 in. to a depth of hold of 14 ft. 1-10th.

I remain, &c.

The Assistant Secretary, (signed) *Samuel Plimsoll,*
Marine Department, Board of Trade. Per *Chas. P. Robert.*

(For Board of Trade reply, *see* Appendix A.)

— No. 367. —

(M. 8887.)

Messrs. *Lambert Brothers & Scott* to Board of Trade.

85, Gracechurch-street, and Co Exchange,
Sir, London, 12 June 1875.

IN answer to your inquiry* dated yesterday, we beg to say that the "*Lady Havelock*" made the passage Tyne to Rochester in 33 hours, which we consider very good, although she seems to have been more deeply laden than usual.

We are, &c.

The Assistant Secretary, (signed) *J. Bell,*
Marine Department, Board of Trade. Pro *Lambert Bros. & Scott.*

— No. 368. —

(M. 9006.)

Mr. *S. Plimsoll,* M.P., to Board of Trade.

4, Victoria-street, S.W.,
Sir, 15 June 1875.

I HAVE again to draw your attention to some cases of overloading shown by the "Records of Draught of Water," recently received from your office. The "*Navarre,*" for instance, see "Record" of the 9th instant, seems to have sailed "very deep" from Liverpool on the previous day, since she could only show a clear side of 17 inches to a depth of hold of 15 ft. 5-10ths. On the same day, the "*Edward Williams*" left North Shields for Gibraltar, deeply laden, a fact which, taken in connection with the recent weather, would assuredly not conduce to her safety. The "Record" of the 10th instant points to an occurrence so unusual that I cannot refrain from adverting to it. I refer to the sailing, on the

* This refers to the ordinary Circular, *See* Appendix (B.).

the 9th, of six vessels from North Shields, with freeboards, to which exception could not possibly be taken. I hail with satisfaction this sign of amendment at a port where overloading had hitherto so frequently occurred. The "Record" of the 10th instant, indicates the departure on the 9th of the "*Cerwyn*," deeply laden, whilst that of the 11th brings the "*Sly Boots*" and the "*Palma*" both from Cardiff, within the same category of overloading. The latter, indeed, could only show a clear side of 2 ft. 3 in. to a depth of hold of 16 ft. 7-10ths. On the 11th instant, the "*Crighton*" and the "*Frankfort*" appear to have sailed from the same port very deeply laden. The last case which I have to bring under your notice is that of the "*Maria Louisa*," which sailed from North Shields "deep," and with a bad list.

I remain, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *Samuel Plimsoll*,
Per *Chas. P. Robert*.

(For Board of Trade reply, *see* Appendix A.

— No. 369. —

(M. 10,765.)

Messrs. *D. Currie & Co.* to Board of Trade.

3 and 4, Fenchurch-street, London. E.C.,
23 July 1875.

Sir,

Upon the return of the "*Navarre*," we have made inquiry into the statement* which you have forwarded to us respecting her alleged draught of water. The fact is, the vessel has a full poop, and is covered in to a great extent on her upper deck. Her engines are aft, and to keep her seaworthy for her voyage, it is absolutely necessary to trim 2½ feet or so by the stern. It is hardly fair to test her proper draught of water by a line drawn at the deepest part. We shall be very glad indeed if you will indicate to us the draught to which you think the "*Navarre*" should be loaded; and if you can extend this by indicating your idea of the proper draught for all our ships we shall be glad, as it is our earnest wish that these vessels should go to sea in the very best possible trim. and to the satisfaction of the Board of Trade.

We are, &c.

Thomas Gray, Esq.,
Assistant Secretary, Marine Department,
Board of Trade.

(signed) *Donald Currie & Co.*

— No. 370. —

(M. 10,765.)

Board of Trade to Messrs. *D. Currie & Co.*

Draught of Water.

Board of Trade, Whitehall Gerdens,
29 July 1875.

Gentlemen,

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 23rd instant, relative to the loading and draught of water of your steamship "*Navarre*," on sailing from Liverpool on the 8th ultimo, and also requesting this department to fix a load line for all your ships.

In reply, I am to inform you that at present the Board of Trade are not prepared to indicate a load line for the vessels in question.

I am, &c.

Messrs. D. Currie & Co.,
3, Fenchurch-street, E.C.

(signed) *Thomas Gray*.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 371. —

(M. 9284.)

Messrs. *Jerome F. Manito & Co.* to Board of Trade.

Royal Insurance Buildings, Newcastle-on-Tyne,
Sir, 21 June 1875.

In reply to your communication* of the 16th instant, we have to advise you of the safe arrival of the steamer "*Maria Louisa*" at Malaga, which event took place this morning at about 11 o'clock, as per telegram just received from the captain.

We have only to add that she sailed from South Shields, not North Shields, as stated in your note.

We are, &c.
The Assistant Secretary, (signed) *H. H. French,*
Marine Department, Board of Trade. Pro *J. F. Manito & Co.*

— No. 372. —

(M. 10,810.)

Messrs. *Jerome F. Manito & Co.* to Board of Trade.

Royal Insurance Buildings, Newcastle-on-Tyne,
Sir, 24 July 1875.

With reference to your letter of the 16th instant, and our reply of 21st June, we have to inform you that Captain Purvis denies the accuracy of your report respecting the list of the "*Maria Louisa.*" He informs us her draft was 17 ft. 1 in. aft., 13 ft. 11 in. forward. She had a list of about 3 to 4 inches (according to your own surveyor's measurements) when she first left the "Spouts," but when she left the dock for sea she was perfectly upright.

Yours, &c.
The Assistant Secretary, (signed) *H. H. French,*
Marine Department, Board of Trade. Pro *J. F. Manito & Co.*

— No. 373. —

(M. 9116.)

Mr. *S. Plimsoll,* M.P., to Board of Trade.

4, Victoria-street, S.W.,
Sir, 17 June 1875.

Permit me to call your attention to some cases of overloading shown in the "Records of Draught of Water" of the 14th and 15th instant. In the first place, I notice the departure from Cardiff on the 12th of the "*Calypso*" deeply laden, and of the "*Wallachia*" with a list of 11¼ inches, the latter bound for Stockholm with railway iron. On the same day the "*Linthorpe*" appears to have sailed from Middlesbro' "very deep," whilst the "*Dione*" left North Shields for Pormen, deeply laden. On the 14th, Cardiff furnishes two cases of overloading, that of the "*Gathorne,*" which sailed deep, and with a bad list, for Malta, and that of the "*Coanwood,*" which left the port in similar condition, coal laden, for Alexandria. Probably these vessels have already engaged the attention of your professional officers.

I remain, &c.
The Assistant Secretary, (signed) *Samuel Pimsoll,*
Marine Department, Board of Trade. Per *Chas. P. Robert.*

(For Board of Trade reply, *see* Appendix A.)

* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 374. —

(M. 9218.)

Messrs. *Taylor, Cameron & Co.* to Board of Trade.

Red Cross Chambers, Liverpool,
Sir, 19 June 1875.

In reply to your communication* of yesterday's date, we beg to say that had your surveyors at Cardiff taken the trouble to look at the "*Wallachia*" steamship before she went to sea, they would probably have discovered that the "list" reported by them had been rectified, as the captain reports to us that such had been done. Assuming this to be the case, we need not answer your inquiry beyond saying that our vessels are never improperly laden to our knowledge. Our usual trade is from Liverpool to the Mediterranean, Black Sea, and Danube with general cargoes, and we load under the inspection of the Liverpool underwriter's surveyors.

We are, &c.
The Assistant Secretary, (signed) *Taylor, Cameron & Co.*
Board of Trade.

P.S.—Your communication was addressed to Henry Taylor, 34, South Castle-street; the "*Wallachia*" is managed by us.

— No. 375. —

(M. 9505.)

Messrs. *Taylor, Cameron & Co.* to Board of Trade.

Red Cross Chambers, Liverpool,
Sir, 26 June 1875.

On the 18th instant you sent us a notice that your surveyors at Cardiff had reported our steamer "*Wallachia*" as sailing from that port improperly laden. To this we replied on the 19th, denying on our captain's report, the truth of that of your surveyors, and on the 21st you simply acknowledge receipt of our letter.

We would be glad to know whether you have deemed it advisable to make further inquiries from your surveyors at Cardiff, and if they still maintain the correctness of their report.

We remain, &c.
The Assistant Secretary, (signed) *Taylor, Cameron & Co.*
Marine Department, Board of Trade.

— No. 376. —

(M. 9505.)

Board of Trade to Messrs. *Taylor, Cameron & Co.*

Unseaworthiness.

Board of Trade, Whitehall Gardens,
Gentlemen, 2 July 1875.

I am directed by the Board of Trade to acknowledge the receipt of your letter of the 26th ultimo, asking whether their surveyors at Cardiff still consider that the steamship "*Wallachia*" was improperly laden when leaving that port on the 12th ultimo, and in reply to state that they have received a subsequent report from their surveyors to the effect that the list the vessel had when first visited by them was considerably reduced before she sailed.

I am, &c.
Messrs. Taylor, Cameron & Co., Shipowners, (signed) *Thomas Gray.*
Red Cross Chambers, Liverpool.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 377. —

(M. 9305.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
22 June 1875.

Sir,

In the "Records of Draught of Water" of the 16th, 17th, and 18th instant, I find some apparent cases of overloading, to which I venture to direct your attention. The first case (*see* "Record," of the 16th instant) is that of the "*Pioneer*," which sailed from Swansea on the previous day with a freeboard of only $10\frac{1}{4}$ inches, her depth of hold being 10 feet on the 16th instant. According to the "Record," of the 17th, three vessels appear to have left North Shields deeply laden, namely, the "*Baidar*," the "*Hastings*," and the "*Wells*." The last named, moreover, had a bad list to starboard. On the same day, the "*R. M. Hernton*," (Qy. "*Hunton*,") sailed from Barrow "very deep," and the "*Annan*" left Cardiff, coal laden, for Gibraltar, deeply laden. I note, on the 16th instant likewise, the departure from Leith of the "*Cumberland*," in a condition which must be characterised as "deep." On the 17th instant, the "*Lady Havelock*" seems to have left North Shields "very deep." I avail myself of this opportunity to express my satisfaction at finding, from your numerous letters, that for many weeks past your professional officers should, in every instance, have anticipated me in calling your attention to those apparent cases of overloading which I have considered it my duty to bring under your notice. Lest, however, anything should escape their vigilance, I shall take the liberty of calling your attention to such cases of overloading as the successive "Records" may appear to supply.

I remain, &c.
(signed) *Samuel Plimsoll*,
Per *Chas. P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 378. —

(M. 9595.)

The Dynevor, Dyffryn and Neath Abbey United Collieries Company (Limited) to Board of Trade.

Neath Abbey, Neath,
28 June 1875.

Sir,

We enclose* you a copy of the statement made by the master of the "*Pioneer*" steamship, of Sunderland, that sailed from the port of Swansea for Warren Point on the 15th instant.

"'*Pioneer's*' voyage from Swansea to Warren Point, 15th June instant, as explained to the surveyor, was deeper than usual, ship being rather too much by the stem; having part cargo of tin-plate, could not judge proper quantity of coals to be put in after-hold; the surveyor remarked she was *light* forward. The voyage was made with the greatest satisfaction as to the seaworthiness of the ship."

It is very seldom we carry tin-plate, therefore this voyage must be looked upon as an exceptional one.

Yours, &c.
(signed) *John Newall Noon*,
Director,
For the Dynevor, Dyffryn and Neath Abbey United Collieries Company (Limited).

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 379. —

(M. 9460.)

Mr. *Martin Wells* to Board of Trade.

Dear Sir, Town Hall, Hull, 25 June 1875.

I HAVE your letter of yesterday,* and in reply, the steamship "*Wells*" had on board no more dead weight cargo than she usually carries, she was reported to me by the master as having 1 ft. 9 in. starboard, and 1 ft. 10 in. port, clear side, and not 1 ft. 4 in. starboard, and 2 ft. port, as you write. I may mention that she arrived at Cronstadt after a *quick* passage of six days.

Yours, &c.
(signed) *Martin Wells.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 380. —

(M. 9587.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W.,
Sir, 28 June 1875.

THE "Records of Draught of Water," recently to hand, point to some cases of overloading to which I beg to direct your attention, although it is quite possible that your professional officers may have anticipated me. Thus the "Record" of the 19th instant appears to show that on the 18th the "*Vanguard*" left North Shields, deeply laden with coal, for Barcelona. The "Record" of the 21st instant, indicates that on the 18th the "*Marne*" sailed from Cardiff for Rouen "deep," and with a bad list. In the "Record" of the 22nd instant, the clear side of the "*Julia*" is simply incomprehensible; a freeboard of 12 feet is given to a vessel of 120 tons, whose depth of hold is put down at 12 feet 6 inches. On the 21st instant the "*Hampshire*" seems to have sailed from Cardiff for Havre, very deeply laden; a short voyage it is true, yet none can tell what may happen. I note the departure from Swansea, on the 21st instant, of the "*Ringdove*," deeply laden. Her destination was Valentia, and her cargo consisted in part of railway iron. The "*Brancepeth*" seems to have been "deep" when she left Liverpool on the 22nd instant for Cronstadt. The "*Vildosala*" "very deep" on leaving Cardiff on the same day, for Barcelona, whilst the "*Charles Tennant*" and the "*Wensleydale*" both appear to have passed the bounds of safety when they sailed, the one for Cronstadt, and the other for Genoa, both from North Shields. The former, in fact, could only show a freeboard of 1 foot 9 inches to a depth of hold of 17 feet 3-10ths. Finally on the 22nd instant, the "*Sumus*" left Middlesbro' with a clear side more suggestive of the past than of the present tense, for she could only show a clear side of 1 foot 4 inches to a depth of hold of 11 feet 3-10ths.

I remain, &c.
(signed) *Samuel Plimsoll*
Per *Chas. P Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 381. —

(M. 9587.)

Board of Trade to Mr. *S. Plimsoll*, M.P.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
1 July 1875.

Sir,

With reference to your letter of the 28th ultimo, calling attention to certain alleged cases of overloading, I am directed by the Board of Trade to inform you that before your letter was received, the cases alluded to by you had been brought before the notice of their professional officers, and, where necessary, acted on by the Board.

I am to add that the clear side of the "*Julia*" was, owing to a clerical error, written as 12 feet, instead of 2 feet.

I am, &c.
(signed) *Thomas Gray*

Samuel Plimsoll, Esq.,
4, Victoria-street, S.W.

— No. 382. —

(M. 9517.)

Mr. *Thomas Jones Stevens* to Board of Trade.

2, Barbican Quay, Plymouth,
26 June 1875.

Sir,

I know nothing of the circumstance* you name relative to the steamship "*Marne*," but have sent a copy of your letter to the master.

It is self-evident, I think, that she must have been visited directly after being laden, and before she could have been trimmed upright to her proper position. She did not leave Cardiff until the 19th, and arrived at Rouen on the 21st, in less time than she usually takes to make the passage.

This vessel never goes overladen. She has been visited several times by the Board of Trade and other officials, and is always within an inch or so, up or down (according to more or less bunker coals being left on board) of the marks.

I am, &c.
(signed) *Thomas Jones Stevens.*

Thos. Gray, Esq.,
Assistant Secretary, Board of Trade.

— No. 383. —

(M. 9634.)

Messrs. *Watts, Milburn & Co.* to Board of Trade.

Draught of Water.

Newcastle-upon-Tyne, 29 June 1875.

Sir,

In reply to your enquiry* of yesterday *re* steamship "*Charles Tennant*," we beg to say that she was not deeper than she usually is at this time of the year; in fact, she has been 6 inches deeper forward. We shall be happy to inform you how she performs her voyage.

We are, &c.
(signed) Pro *Watts, Milburn & Co.*,
Jas. S. Walton.

Managing Owners, steamship "*Charles Tennant.*"

To the Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 384. —

(M. 9816.)

Messrs. *Watts, Milburn & Co.* to Board of Trade.

Sir, Newcastle-upon-Tyne, 2 July 1875.

We have had a telegram from the captain of steamship "*Charles Tennant*," advising his arrival at Cronstadt all well, on Wednesday last, having done the passage from the Tyne in six days, which does not look as if she had been loaded too deeply.

We are, &c.
(signed) Pro *Watts, Milburn & Co.*,
Jas. S. Walton.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 385. —

(M. 9829.)

General Iron Screw Collier Company, Limited, to Board of Trade.

17, Gracechurch-street, London, E.C.,
Sir, 2 July 1875.

I duly received your letter* dated 26th June, referring to the '*Vildosala's*" draught of water when she left Cardiff on the 22nd.

I now beg to inform you that the captain reported that the ship had 6 ft. 4½ in. clear side aft, 4 ft. 5¾ in. clear side forward, and 1 ft. 7¼ in. amidships. He also wrote as follows: "I have had the Board of Trade people making a fuss about our being so deep, but in my opinion she is not any too deep, and I would go anywhere in her present trim."

I have further to inform you that the ship arrived at Barcelona at 8, last evening, all well.

I am, &c.
(signed) *W. Balcomb*, Secretary.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 386. —

(M. 9732.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S. W.,
Sir, 1 July 1875.

The "Records of Draught of Water" of the 25th, 26th, 28th and 29th ultimo, suggest some further observations on the subject of overloading. Thus, I find that on the 23rd of last month, the "*Bessemer*" sailed from Middlesborough, laden with pig and railway iron, "very deep," since she could only show a clear side of 15 inches to a depth of hold of 12 feet 1-10th. There must surely be some mistake in the "Record" of the 25th ultimo, which gives the "*Darent*," bound from North Shields to Palermo, a list to starboard of 2 feet 5 inches. The "*Barrington*" appears to have been "very deep" when she left Swansea on the 24th ultimo; and the "*Dagmar*," "deep," when she sailed from Hull on the same day. The same remark applies to the "*Ella Constance*," which left Cardiff for Bordeaux on the following day, and to the "*Osborn*," whose departure from Leith likewise took place on the 25th ultimo, on which day the "*Abana*," the "*Ernest*," and the "*Rowena*," seem to have sailed

* This refers to the ordinary Circular. *See* Appendix (B.).

sailed from North Shields, deeply-laden. On the following day the "*Savernake*" left the same port, with coal for Seville, very deeply laden; for she could only boast of a freeboard of 17½ inches to a depth of hold of 14 feet 5-10ths.

I remain, &c.
(signed) *Samuel Plimsoll,*
Per *Charles P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 387. —

(M. 9732.)

Board of Trade to Mr. *S. Plimsoll,* M.P.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
8 July 1875.

Sir,

With reference to your letter of the 1st instant, calling attention to certain cases of alleged overloading, I am directed by the Board of Trade to inform you that before your letter was received, the cases alluded to by you had been brought before the notice of their professional officers, and, where necessary, acted on by the Board.

I am to add, that the information furnished to you in the "Draught of Water Record" of the 25th ultimo, relative to the "*Darent,*" is correct, and that there was not time for the surveyor, who measured her freeboard, to advise the Board of Trade, by telegram, of her condition before she went to sea.

I am, &c.
(signed) *Thomas Gray.*

S. Plimsoll, Esq., M.P.,
4, Victoria-street, S. W.

— No. 388. —

(M. 9983.)

Mr. *S. Plimsoll,* M.P., to Board of Trade.

4, Victoria-street, S. W.,
6 July 1875.

Sir,

The "Records of Draught of Water," recently received, point to some apparent cases of overloading, to which, I venture to draw your attention. In the "Record" of the 1st instant, I find noted the departure of the "*Rotterdam,*" from Grangemouth, on the 28th ultimo, very deeply laden, whilst on the 1st instant the "*Marie Ange*" sailed from Swansea, "deep." In the "Record" of the 2nd instant, Cardiff furnishes three cases of overloading, namely, the "*Lady Tredegar,*" bound for Barcelona, the "*Rothesay,*" and the "*Lady Clive,*" whose destination was Gibraltar. These vessels appear to have been very deeply-laden. Again, when the "*Birling*" left Sunderland on the 30th instant, she could only show a clear side of 1 foot 3 inches to a depth of hold of 11 feet 5-10ths; and the "*Nereid,*" was in the same condition when she sailed from North Shields. The "*Regalia,*" which left at the same time, is mentioned as having a list to starboard of 2 feet 5 inches; but this, I presume, is a clerical error. On the 1st instant, the "*E. S. Jobson*" seems to have sailed from Swansea, coal laden, for Malta, very deep, and the words "dangerously deep" may be written against the "*Maude,*" which left Hull for Helsingfors on the same day, for her freeboard was but 20 inches against a depth of hold of 16 feet 2-10ths. On the 1st instant, also, the "*Ouse*" sailed from Middlesborough, with pig-iron, for Cronstadt, deeply laden; and the "*Regalia*" again crops up at North Shields (2nd July), this time with a list reduced to 1 foot 8 inches.

I remain, &c.
(signed) *Samuel Plimsoll,*
Per *Charles P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, see Appendix A.)

— No. 389 —

(M. 10,065.)

Mr. *John Cory* to Board of Trade.

Sir, Cardiff, 7 July 1875.

In reply to your communication* of the 6th, I am not aware whether the "*Lady Clive*" left our port as represented to you, but will question the captain on his return.

It should be remembered that the vessels loaded here are in fresh water, and draw less water when they get into salt water.

We have a telegram advising us of her safe arrival at Gibraltar, on Tuesday evening.

I have never had any complaint before of her being deeply laden, and I generally leave it with the captain to put on board what he considers she will get to her destination safely with.

I remain, &c.

The Assistant Secretary, (signed) *John Cory*,
Marine Department, Board of Trade.

— No. 390. —

(M. 10,057.)

Messrs. *John Hall & Co.* to Board of Trade.

"*Regalia*" Steamship.

Cail's Buildings, Quayside, Newcastle-on-Tyne,

Dear Sir, 7 July 1875.

In reply to your communication* of yesterday, it would really be much better, and save a vast amount of trouble to you, as well as shipowners, if your officials in reporting the trim of vessels leaving the port, would be a little more accurate in giving their information. We may state for your information, that when this vessel was loaded, she had a few *inches* list, which is almost invariably so when loading coke. She was also a good deal by the *stern*, and to get her into proper trim, the captain ordered her *fore* tank to be filled. Your official arrived shortly after the process of filling the fore tank had been begun, and as a *natural consequence* the water ran down to the side having the list, thus listing her *still further*; but when the tank was *full* she became *upright* or very nearly so, and proceeded to *sea* in this upright trim; all this was explained to your officer. The vessel has since made a splendid run to the Downs, and towed the "*Renown*" from the Kentish Knock to Deal, as you are probably aware, thus proving, sufficiently we think, that she was not only in good trim so far as she was concerned, but was capable of rendering efficient aid to others.

Hoping our explanation is satisfactory to you,

We remain, &c.

Thomas Gray, Esq. (signed) *John Hall & Co.*

— No. 391. —

(M. 10,670.)

Messrs. *E. S. Jobson & Co.* to Board of Trade.

Sir, West Hartlepool, 21 July 1875.

In further reply to your letter* of the 6th instant, we beg to inform you that our steamship "*E. S. Jobson*" made a fine passage from Swansea to Malta in 11 days 4 hours.

This steamer has a good sheer, and although she might appear amidships to be deeply laden, she was in good trim and perfectly safe.

We are, &c.

The Assistant Secretary, (signed) *E. S. Jobson & Co.*
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 392. —

(M. 11,436.)

Messrs. *Massey & Sawyer* to Board of Trade.

Reval, Helsingfors, and Abo Steam Navigation Offices,
Hull, 5 August 1875.

Dear Sir,

REPLYING to your letter of 8th July*, addressed to E. P. Youell, Esq., Great Yarmouth, we beg to say we are the owners of the "*Maude*," to which steamer you refer as leaving Hull for Helsingfors with a general cargo.

We beg to say that the ship had no more dead weight in than she has carried on an average the last three years, and she has never met with any mishap, but has always made her voyages in perfect safety. For any further information respecting her, we refer you to our letter dated 10th April 1875.

We are, &c.
(signed) *Massey & Sawyer.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 393. —

(M. 10,217.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S. W., 10 July 1875.

Sir,

IN my letter of the 6th instant, I called your attention to what appeared the very inadequate clear side of the "*Maude*," viz, 20 inches only to a depth of hold of 16 feet 2-10ths. That vessel was reported to have left Hull, for Helsingfors, on the 1st instant. In the "Record" of the 5th instant, however, she figures again, as having sailed on the 2nd instant, with a freeboard of only 19 inches. I am unable, I confess, to reconcile these contradictory statements as to time and measurement. The "*May Queen*," I may add, seems to have sailed "deep" from Cardiff on the 2nd instant, whilst the "*General Havelock*" left Sunderland, for the Thames, in similar condition.

I remain, &c.
(signed) *Samuel Plimsoll.*
per *Charles P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade

(For Board of Trade reply, *see* Appendix A.)

— No. 394. —

(M. 10,314.)

Mr. *S. Plimsoll*, M. P., to Board of Trade.

4, Victoria-street, S. W., 13 July 1875.

Sir,

A REFERENCE to the "Records of Draught of Water" of the 7th, 8th, and 9th instant, suggests the following observations: that the "*Scoresby*" left Cardiff on the 6th instant, for Palermo, very deeply laden, unless, indeed, she possessed elements of safety that I fail to discover in the "Record" which notes her departure; that, at the same date, the "*Alfgar*" sailed from North Shields, for Dantzig, "deep"; and that, on the 7th instant, the "*William Banks*" left Cardiff in like condition, and with a list. The "*Arbutus*," which sailed from the latter port at the same time, was very deeply laden. I note the departure of the "*City of Manchester*," from Liverpool, on the 7th instant, for Calcutta, with a list of two feet. With regard to the "*Clara*," which left Swansea on the same day, for Lisbon, deeply laden, her clear side was but 18 inches to a depth of hold of 11 feet 2 inches; there must, I imagine, be some error

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*This refers to the ordinary Circular. *See* Appendix (B.).

error in her tonnage, as given in the "Record" of the 8th instant, viz., 1,455 tons register. Cardiff, on the 8th instant, supplies two cases of overloading, in the "*Melina*" and the "*Toronto*," the former of which sailed "deep," and the latter "very deep," with the dangers of the Bay of Biscay in prospective.

I remain, &c.
(signed) *Samuel Plimsoll*,
per *Charles P. Robert*.

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 395. —

(M. 10,405.)

Mr. *Louis Guéret* to Board of Trade.

Sir, Cardiff, 15 July 1875.

In reply to yours* of 12th instant, *re* steamship "*William Banks*": The ship is now in this port, having made the voyage to Havre and back very quickly. I have interrogated the ship's officers, and also the men who loaded the cargo, and they all totally deny that the ship had the list mentioned in your letter.

I remain, &c.
(signed) *Louis Guéret*,
per *M. P. Whitefield*.

To the Assistant Secretary, Marine Department,
Board of Trade.

— No. 396. —

(M. 10,576.)

Messrs. *George Smith & Sons* to Board of Trade.

Re "City of Manchester."

200, Argyle-street, Glasgow,
Dear Sir, 19 July 1875.

In reply to your favour* of 12th instant, we have to say that we sent it to our Liverpool agents on receipt, asking their report on ship's trim, and have received the following reply.

"'*City of Manchester*' had a slight list to port, caused by the 86-ton bunker on that side. In the course of two or three days the engineer would have her upright, and we think the amount of the deflection, which was not at all considerable, has been considerably exaggerated. As you are aware, this steamer was short of cargo, and not down to her draught, by two feet. She was thus in very light trim, and the bunker would have more effect upon her than if deeper, but she will make much better weather as she is, and Captain Karns thought he would never have a better chance of making a quick run out."

To this we have merely to add, that a telegram we had from Malta, on Friday, informs us that she passed that island on that day, *all well*; less than nine days from Liverpool.

As indicated in our last, we are of opinion that much unnecessary trouble is given to your department as well as to shipowners by a want of judgment on the part of your surveyors. The facts referred to above, as stated by our agents as well as those connected with the "*City of Perth*," must have been patent to your surveyor when making his reports; reports which, in both cases, convey a decidedly erroneous impression as to the state of the ships when actually leaving port.

We are, &c.
Thomas Gray, Esq. (signed) *George Smith & Sons*.

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 397. —

(M. 10,671.)

Messrs. *George Smith & Sons* to Board of Trade.

"*City of Manchester.*"

200, Argyle-street, Glasgow,
21 July 1875.

Dear Sir,

We have the pleasure* to inform you that the "*City of Manchester*" arrived at Port Said yesterday, having made the passage, from pilot leaving her off Point Lynas, in 12 days 14½ hours.

We are, &c.

Thomas Gray, Esq. (signed) *Geo. Smith & Sons.*

— No. 398. —

(M. 11,750.)

Messrs. *George Smith & Sons* to Board of Trade.

"*City of Manchester.*"

200, Argyle-street, Glasgow,
10 August 1875.

Dear Sir,

We have much pleasure in stating that this ship, which you were advised was "*improperly laden,*" arrived at Calcutta on or before 7th instant, having made the passage somewhat under the month; the exact time of arrival has not been given to us, but from the time at which the telegram reached us she cannot have been over 17 days from Suez, say, 408 hours.

You are probably aware that the Peninsular and Oriental Company, largely subsidised by Government, are allowed 501 hours to perform the same service under their contract of 1870, altered, and so far as time is concerned, confirmed, in August of 1874, at the very close of Parliament. That any Government should have sanctioned the continuance of such an arrangement, and made the *mail* service thus wholly subservient to a *goods* service for the paltry consideration of 20,000 *l.* or 30,000 *l.* reduction in the enormous subsidy granted this company, we cannot understand, and are surprised our Indian and Australian fellow subjects do not protest against it.

We are, &c.

Thomas Gray, Esq. (signed) *Geo. Smith & Sons.*

— No. 399. —

(M. 11,118.)

Messrs. *Hine Brothers* to Board of Trade.

"*Clara.*"

Custom-house Buildings, Maryport,
31 July 1875.

Dear Sir,

In reply to your communication* of the 12th instant, addressed to Sloane Richards, Esq., Birmingham, and forwarded to us, as managers of the vessel, we have now pleasure in informing you that we have advices from the captain of her safe arrival at Lisbon on the 22nd instant after a good passage, marred only by head winds and calms. The cargo she had on board was her usual quantity.

We are, &c.

The Assistant Secretary,
Marine Department, Board of Trade. (signed) *Hine Brothers.*

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 400. —

(M. 10,480.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 17 July 1875.

In the "Record of Draught of Water" of the 10th instant, I find some seeming cases of overloading, to which I beg to direct your attention. On the 8th instant, the "*Commissariat*," appears to have left North Shields, coal laden, for the Baltic, with a very inadequate clear side, and on the following day, the "*Mary Coverdale*" sailed from Barrow, for Taganrog, deeply laden. The "*Rothesay*" was "deep" and the "*Cavalier*" "very deep," when they left Cardiff on the 9th instant. I notice that the same "Record" omits to give the clear side of the "*Llandaff*" and the "*Warrior*." Passing on to the "Record" of the 12th instant, I observe that the "*Lily Dale*" was "very deep," when she sailed from Cardiff, with an iron cargo, for Gottenburg, on the 10th. In the "Record" of the 14th instant, I can, I am glad to say, discover no case which comes within the scope of these communications.

I remain, &c.

The Assistant Secretary, (signed) *Samuel Plimsoll*,
Marine Department, Board of Trade. per *Chas. P. Robert*.

(For Board of Trade reply, *see* Appendix A.)

— No. 401. —

(M. 10,455.)

Messrs. *Davidson & Charlton* to Board of Trade.

Quayside, Newcastle-on-Tyne,

Sir, 15 July 1875.

We are in receipt of your communication* dated yesterday, regarding our steamship "*Commissariat*," and must confess that it is with the greatest possible surprise that we have received same.

We do not know if the clear side of the boat is correctly measured, but know that her draught of water was considerably less than she usually goes away with, and from it think the measurement *nearly correct*. Through some mistake in loading, the boat was about *100 tons* short of her usual cargo, and she goes to sea with the most perfect safety, loaded several inches deeper than she was on this occasion; even in winter, 2ft. 2in. is an ample clear side for a boat like her, and we have known cases where boats have been stopped by your surveyors, and only made to lighten till they had 2ft. 2in. clear side. Why then, may we ask, do we have a complaint about our boat going to sea with this side? It seems as though the surveyors here had some prejudice against our boats, that we are constantly having these complaints, and when we can see other people's steamers sailing out the river with impunity, loaded nearly down to the scuppers. There was, in fact, a boat lying close to the "*Commissariat*," in the Tyne Dock before she sailed, which we consider *was deeply loaded*, but we cannot hear that any notice has been taken of it.

We do not know any of the surveyors here, either directly or indirectly, and have no wish therefore to complain, but we certainly do like to see justice fairly administered. We let our boats and all connected with them, stand on their own merits, as we always keep them well up, and would not on any account send them away unseaworthy, and we consider this enough. We do not know if other people manage theirs differently that there seems such partiality shown, but if others act differently, we will not stoop to do it; and we think, in justice to

* This refers to the ordinary Circular. *See* Appendix (B.).

to yourself, you should see that men are appointed as surveyors or *under* surveyors who are above being influenced by owners or captains being their friends, or any other *similar* or *dissimilar* reason.

You say that you are advised that with 2ft. 2in. clear side the vessel was deeply laden. We have only to say in reply, that whoever says the boat went away from here last time she left deeply laden, states what is absolutely and distinctly untrue. The boat was bound to Reval (not Cronstadt), and made a fine passage out, arriving on the sixth day, although she had very heavy weather in the North Sea.

We are, &c.
(signed) *Davidson & Charlton.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 402. —

(M. 10,609.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

Sir, 4, Victoria-street, S.W., 20 July 1875.

THE "Record of Draught of Water" of the 15th instant is to hand, and appears to show that on the 13th the "*Kingston*" sailed from Cardiff, coal laden, for Malta, "deep;" the clear side, seven inches only; given in the same "Record" to the "*Surrey*," which left Hull on the same day for Cronstadt, is, I imagine, a mistake, for her depth of hold is put down at 15 5-10ths. 23.0. The freeboard of the "*Payta*," whose departure from Cardiff took place on the 13th instant, is omitted in the "Record" under notice. Finally, the "*Canadian*" appears to have been "very deep" when she sailed from North Shields, with a cargo of iron, for Cronstadt, on the 13th instant.

I remain, &c.
(signed) *Samuel Plimsoll,*
per *Chas. P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

— No. 403. —

(M. 10,869.)

Messrs. *J. Young, Ehlers & Co.* to Board of Trade.

Commercial Steam Ship Company, Limited,
32, Great St. Helen's, London,
26 July 1875.

Dear Sir,

IN reply to your favour* of 19th instant, we beg to inform you that the steamship "*Kingston*" has arrived at Malta; this steamer is not usually so deeply laden as you state, and we enclose an extract of the captain's letter, written after the steamer was loaded, from which it would appear that there has been some mistake either in the weight of cargo or in the measurement of the draught of water.

We are, &c.
(signed) *J. Young, Ehlers & Co.,*
per *E. Drew.*

The Assistant Secretary,
Marine Department, Board of Trade.

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* This refers to the ordinary Circular. *See* Appendix (B.).

Enclosure in No. 403.

EXTRACT of Captain *Clutham's* Letter, dated Steamship "*Kingston*" at Sea, 13th July 1875.

"WE finished loading this morning; have taken in 1,430 tons of cargo, and 330 tons 11 cwt. bunkers; the engineer estimates he had 50 tons in the bunkers on arrival at Cardiff; if we had not more than this quantity, I think there must be some mistake in the weights; the ship's draught, as taken by the Board of Trade officer, being 20-feet aft, and 18 feet 9 inches forward, with a clear side of only 2 feet 9 inches."

— No. 404. —

(M. 10,080.)

Messrs. *Bailey & Leetham* to Board of Trade.

Baltic and Portuguese Steamship Offices,
Commercial-road, Hull,
28 July 1875.

Dear Sir,

WE beg to acknowledge your communication* of the 19th instant, regarding the draught of water of our steamship "*Surrey*" in leaving Hull on the 13th instant for Cronstadt. The freeboard was seven inches to the *between* decks, not *main deck*; the height of between decks is eight feet, so her freeboard was eight feet seven inches to this ship's main deck; she is a flush deck ship; the whole of the framing, and size of ship's plating is carried to this upper deck. She had a good run to Cronstadt, arriving there on the 22nd instant, all well.

We are, &c.
(signed) Pro *Thomas Bailey & Leeth a*,
Rob. White.

P.S.—The ship generally leaves port at about this draught of water.

Thomas Gray, Esq.,
Assistant Secretary, Marine Department.

— No. 405. —

(M. 10,711.)

Mr. *S. Plimsoll*, M.P., to Board of Trade.

4, Victoria-street, S.W., 22 July 1875.

THE "Records of Draught of Water" of the 17th and 20th instant, disclose, I regret to say, numerous cases of overloading. Cardiff on the 15th and 16th instant supplies five cases; in the "*Kingmoor*," the "*Ocean Swell*," the "*R. L. Alston*," the "*City of Durham*," and the "*Commodore*," all of which left that port "deep." Middlesborough, on the 16th instant, furnishes two cases; in the "*Nile*" and the "*Rosa*," which were "very deep" when they sailed, with iron cargoes, the one for Cronstadt, and the other for Revel. The "*Camerata*" was "very deep," and the "*Fatfield*" "deep" when they left North Shields, on the 15th instant. On the following day the "*Kirch*" sailed, from Sunderland, and the "*Rio Grande Do Sul*" from the port of London, both with very bad lists, the former having a list to starboard of 22 inches, and the latter one to port of 17 inches. Finally, I note the departure of the "*Artos*" from North Shields on the 17th instant, deeply laden. Probably these cases have been brought under your notice by your professional officers.

I am, &c.
(signed) *Samuel Plimsoll*,
per *Chas. P. Robert.*

The Assistant Secretary,
Marine Department, Board of Trade.

(For Board of Trade reply, *see* Appendix A.)

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* This refers to the ordinary Circular. *See* Appendix (B.).

— No. 406. —

(M. 11,018.)

Rio Grande Do Sul Steamship Co. (Limited) to Board of Trade.

1, East India Avenue, Leadenhall-street, London,
30 July 1875.

Sir,

In reply to yours* of 27th July, in which you request my attention to the departure of steamship "*Rio Grande Do Sul*" for Antwerp, showing a side of 7 feet 5 inches port, and 8 feet 10 inches starboard, and therefore having a list,—

I beg to inform you that the stores at the time of departure were being stowed away, and the ship righted before leaving, so that before getting to sea she was in perfect trim. I may also mention that the Marine Superintendent and myself were on board, and can testify to the facts, having made a most satisfactory passage in her to Antwerp.

I confess I am rather surprised at your attention being drawn to the matter, as every precaution is taken for the proper safety and welfare of the Company's steamships, and no expense is spared as to crew or equipment. Owing to cargo coming at last moment, as is often the case with steamers, the stores had to remain on 'tween decks until all was in, being wanted for inspection at Antwerp, while the line being under subsidy from the Brazilian Government, forbids any delay in date of departure. The vessel was not down to her permitted draught, 13 feet.

I am, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *Edmund Wm. Wheeler*,
Secretary.

*This refers to the ordinary Circular. *See* Appendix (B.).

APPENDIX.

Appendix (A.)

DRAFT of Reply sent to Mr. *Plimsoll*, M.P., in answer to his Letters on the "Records of the Draught of Water."

Board of Trade to Mr. *S. Plimsoll*, M.P.

Unseaworthiness.

Board of Trade, Whitehall Gardens,
187 .

Sir,

WITH reference to your letter of the drawing attention to certain cases of alleged overloading, I am directed by the Board of Trade to inform you that previously to the receipt of your letter the cases enumerated by you had been brought before their professional officers, and, where necessary, dealt with by the Board.

I am, &c.

Samuel Plimsoll, Esq., M.P. (signed) *Thomas Gray.*

Appendix (B.)

CIRCULAR sent to the Owners of Vessels which the Board of Trade, on receiving the Records of the Draught of Water from the various Ports, considered to be Overladen or Improperly Laden.

Draught of Water.

Board of Trade, Whitehall Gardens,
187 .

I AM directed by the Board of Trade to inform you that the of, , is reported to have sailed from the port of with for , on the , having a clear side of only

The Board of Trade are advised that, with the clear side above indicated, the vessel was * † , and will be glad to be informed how she makes the voyage in question, and whether she is usually so * † as is reported, at this season of the year.

Any other observations you may have to offer on the subject will be placed, with the record in this department.

* Improperly laden.
† Deeply laden.

I am, &c.
(signed) *Thomas Gray.*

MERCHANT SHIPS (CREWS COMMITTED TO PRISON).

RETURN to an Address of the Honourable The House of Commons, dated 23 July 1875;—*for*,

"RETURN of the CREWS of MERCHANT SHIPS COMMITTED to PRISON in 1873 and 1874 for Refusing to proceed to Sea, showing Number of Men, Name of Ship, and Term of Imprisonment, with Reasons alleged by Seamen for Refusing to go to Sea; and stating, also, in what Cases the Men are known to have received Wages in Advance, showing the Amount received, and whether in Advanced Notes or in Cash; and stating, in each Case, whether the Committing Magistrate availed himself of the Power conferred upon him to order a Survey by one of the Surveyors of the Board of Trade."

(*Mr. Plimsoll.*)

Ordered, by The House of Commons, *to be Printed*,
13 *August* 1875.

ENGLAND AND WALES.

RETURN of the CREWS of MERCHANT SHIPS COMMITTED to PRISON in 1873 and 1874 for Refusing to proceed to Sea, showing Number of Men, Name of Ship, and Term of Imprisonment, with Reasons alleged by Seamen for Refusing to go to Sea; and stating, also, in what Cases the Men are known to have received Wages in Advance, showing the Amount received, and whether in Advance Notes or in Cash; and stating, in each Case, whether the Committing Magistrate availed himself of the Power conferred upon him to order a Survey by one of the Surveyors of the Board of Trade.

COUNTY AND NAME OF PRISON.	Year.	NAME OF SHIP.	Number of Men Committed to Prison.	By whom Committed, giving Name of Petty Sessions.	Date of Conviction.	Term of Imprisonment.	Reasons alleged by Seamen for Refusing to proceed to Sea.	Wages Advanced. Amount received in Advance Notes.	Wages Advanced. Amount received in Cash.	Whether Committing Magistrate ordered Survey by a Board of Trade Surveyor.
ENGLAND.								£. s. d.	£. s. d.	
CAMBRIDGESHIRE:										
Isle of Ely Prison, at Wisbeach.	1873	Cosgrove	1	J. Ford, esq., Mayor of Wisbeach, Borough Petty Sessions.	19 Sept. 1873	10 weeks' hard labour	No reason given; a bad character.	Not stated	Not stated	No application for survey by a Board of Trade surveyor was made in any of these cases.
	1874	Viola	1	Ditto	24 Aug. 1874	6 weeks' hard labour	No reason given; on the "spree" ashore.	Nil	Nil	
CHESHIRE:										
Chester County Prison, Chester Castle.	1873	Sorata	1	J. Younghusband, esq., Borough Police Court, Birkenhead.	18 Jan. 1873	10 weeks	No reasons given, except after receiving advance note, he refused to join.	Not stated	Not stated	
	1874	Whampoa	1	C. J. Preston, esq., Borough Police Court, Birkenhead.	18 July 1874	2 weeks	ditto	ditto	ditto	
CORNWALL:										
Cornwall County Prison, Bodmin.	1873	*Stephenson	1	Justices of Falmouth	3 Jan. 1873	8 weeks' hard labour		Not stated	Not stated	
		Henry Pelham	4	Ditto	6 Jan. „	4 to 8 weeks	Insufficient food	ditto	ditto	
		Annie Williams	3	Ditto	15 Jan. „	6 to 8 weeks	Leaky ship	ditto	ditto	
		Lizzie Lee	1	Ditto	18 Jan. „	4 weeks	Unseaworthy ship	ditto	ditto	
		*Nereus	1	Ditto	20 Jan. „	8 weeks	Bad captain	ditto	ditto	
		†Portena	1	Ditto	25 Jan. „	2 weeks	Leaky ship	ditto	ditto	
		Annie	2	Ditto	28 Jan. „	6 and 12 weeks	Bad mate	ditto	ditto	
		Albyn	1	Ditto	29 Jan. „	4 weeks	Leaky ship	ditto	ditto	
		Portena	2	Ditto	29 Jan. „	4 weeks	ditto	ditto	ditto	
		*George and Richard	1	Ditto	29 Jan. „	12 weeks	Bad usage	ditto	ditto	
		Foam	1	Ditto	29 Jan. „	4 weeks	ditto	ditto	ditto	
		Armanella	5	Ditto	30 Jan. „	3 to 6 weeks	Leaky ship and bad usage	ditto	ditto	
		Alfred the Great	5	Ditto	30 Jan. „	4 to 6 weeks	ditto ditto	ditto	ditto	
		*Europa	2	Justices of Penzance	5 Feb. „	8 weeks	Unseaworthy	ditto	ditto	
		‡Portena	2	Justices of Falmouth	8 Feb. „	12 weeks	Unseaworthy, and short provisions	ditto	ditto	
		Charles	1	Justices of Penzance	11 Feb. „	14 days	Leaky	ditto	ditto	
		Gilsland	1	Justices of Falmouth	20 Feb. „	4 weeks	Bad usage	ditto	ditto	
		Mermaid	1	Ditto	4 Mar. „	6 weeks	Leaky	ditto	ditto	
		City of Cashmere	4	Ditto	22 Mar. „	4 to 10 weeks	Ill-usage	ditto	ditto	
		Golden City	12	Ditto	12 April „	4 to 10 weeks	Leaky	ditto	ditto	
		Constantine	1	Ditto	14 June „	7 days	No reason assigned	ditto	ditto	
		Beryl	1	R. G. Lakes and A. Coode, esqrs., St. Austell.	28 Aug. „	21 days	Leaky ship	ditto	ditto	
		Hygeia	3	Justices of Falmouth	10 Oct. „	8 to 10 weeks	Bad captain	ditto	ditto	
		*Martha Miller	1	R. G. Lakes and A. Coode, esqrs.	1 Nov. „	1 calendar month hard labour.	Leaky ship	ditto	ditto	

	1874	Princess of Wales	1	Justices of Falmouth	25 Feb. 1874	3 weeks' hard labour	Ill-treatment by mate	ditto	ditto	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Roderick Dhu	4	Ditto	2 Mar. „	8 to 9 weeks	Unseaworthy	ditto	ditto	
		Berkshire	1	Ditto	2 Mar. „	4 weeks	Ill-health	ditto	ditto	
		Atlantic	11	Ditto	7 April „	6 to 9 weeks	Leaky ship	ditto	ditto	
		Ditto	1	Ditto	10 April „	21 days	Disliked ship	ditto	ditto	
		Favorite	3	Ditto	17 April „	4 to 12 weeks	Unseaworthy	ditto	ditto	
		Milligan	1	Ditto	20 Aug. „	14 days' hard labour	No reason assigned	ditto	ditto	
		Mavis	2	Ditto	1 Sept. „	7 days' hard labour	Leaky ship	ditto	ditto	
		Erin	2	Ditto	5 Sept. „	10 to 12 weeks	Leaky ship; and one stated he did not sign to go.	ditto	ditto	
		Zaida	3	Ditto	5 Sept. „	4 weeks	Leaky ship	ditto	ditto	
		Ocean	1	Ditto	5 Oct. „	12 weeks	Unseaworthy	ditto	ditto	
		Rosebud	2	Ditto	7 Oct. „	7 and 8 weeks	Bad and foul ship	ditto	ditto	
		Peony	1	Ditto	3 Nov. „	10 days	No reason assigned	ditto	ditto	
		Ditto	1	Ditto	4 Nov. „	2 months' hard labour	Bad ship	ditto	ditto	
		Sarah	1	R. G. Lakes and A. Coode, esqrs.	8 Dec. „	15 days' hard labour	- ditto	ditto	ditto	
		Ravenstondale	4	Justices of Falmouth	12 Dec. „	4 to 9 weeks	Ship undermanned	ditto	ditto	
DEVONSHIRE:										
A 2 Devon County Prison, Exeter.	1873	Ardross	5	A. C. Bassett and R. Vye, esqrs., Ilfracombe.	-	28 days' hard labour	The seamen made a claim for wages in the middle of the voyage, which were not due until the termination thereof, and refused to go to sea, and deserted the ship in consequence.	Not stated	Not stated	
		Biafra	1	P. B. Drinkwater and W. Bridges, esqrs., Torquay.	-	1 month hard labour	Pleaded guilty; no reason assigned	ditto	ditto	
		Ditto	4	W. Bridges, esq., Torquay	-	7 days' hard labour	The crew refused to go to sea, alleging as a reason that all the seamen of the place had determined, when a ship was ballasted on Saturday nights, not to go to sea till Monday morning.	ditto	ditto	
		Annie	4	R. J. Laity, esq., East Stonehouse	30 Oct. 1873	42 days' hard labour	Ship leaky, and no accommodation in forecastle.	ditto	ditto	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Ditto	1	Ditto	30 Oct. „	21 days' hard labour	None	ditto	ditto	
	1874	City of Durham	8	Admiral Lowe and J. B. Wilcocks, esq., East Stonehouse.	10 Jan. 1874	10 weeks' hard labour	Ship unseaworthy	ditto	ditto	
		Clara Babrien	3	G. W. Sottaw and C. Simpson, esqrs., East Stonehouse.	20 Feb. „	1 month hard labour	None	ditto	ditto	
		Stonehouse	10	Admiral Lowe and J. B. Wilcocks, esq., East Stonehouse.	8 April „	10 weeks' hard labour	Ship unseaworthy	ditto	ditto	
		Westbury	3	R. J. Laity and C. Simpson, esqrs., East Stonehouse.	16 June „	2 months' hard labour	- ditto	ditto	ditto	
		Ship not named	1	Lord Churston and H. Studdy, esq., Churston Ferrers.	16 Sept. „	1 month hard labour	No reason alleged; was drunk	ditto	ditto	
		Ditto	1	H. Studdy and H. T. Uniacke, esqrs., Churston Ferrers.	16 Sept. „	1 month hard labour	No reason alleged; was a fishing apprentice.	ditto	ditto	

* The cases marked thus (*) were for "desertion."

† In the first "Portena," of Liverpool, marked thus (†), there were two charges against the one prisoner, 1st, for embezzling beer, a portion of the cargo, so that the 2nd charge "for disobeying the lawful commands of the master" was overlooked, as well as the second "Portena," of Liverpool, marked thus (‡).

RETURN of the Crews of Merchant Ships which have been Committed to Prison in the Years 1873 and 1874, for Refusing to proceed to Sea, &c.—*continued.*

COUNTY AND NAME OF PRISON.	Year.	NAME OF SHIP.	Number of Men Committed to Prison.	By whom Committed, giving Name of Petty Sessions.	Date of Conviction.	Term of Imprisonment.	Reasons alleged by Seamen for Refusing to proceed to Sea.	Wages Advanced. Amount received in Advance Notes.	Wages Advanced. Amount received in Cash.	Whether Committing Magistrate ordered Survey by a Board of Trade Surveyor.
								£. s. d.	£. s. d.	
DORSETSHIRE:										
Dorset County Prison, Dorchester.	1873	Edinburgh Castle	3	James Robertson and Joseph Ayling, esqrs., Weymouth Petty Sessions.	6 Jan. 1873	6 weeks	No reason	Not stated	Not stated	
		Lydia	7	J. Drew, G. Reynolds and W. Talbot, esqrs., Weymouth Petty Sessions.	16 Jan. ,,	2 months	Alleged ship leaky, and food not properly cooked.	ditto	ditto	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Eliza Laing	8	J. Drew and G. Reynolds, esqrs., Weymouth Petty Sessions.	11 Mar. ,,	1 month	Alleged ship leaky	ditto	ditto	
		Ravensworth	1	J. Robertson and J. Ayling, esqrs., Weymouth Petty Sessions.	4 Oct. ,,	14 days	Refused to proceed, as he wanted to join a screw steamer.	ditto	ditto	
	1874	Eleanor	5	R. ff. Eliot, W. J. Smith, and George E. Eliot, esqrs., Melcombe Regis Petty Sessions.	15 Jan. 1874	10 weeks	Ship not sufficiently caulked; forecastle too small.	ditto	ditto	Survey ordered; report favourable to the ship.
		Amphitrite	1	J. Drew and G. Reynolds, esqrs., Weymouth Petty Sessions.	21 Jan ,,	28 days	Because he was ordered to take his meals forward.	ditto	ditto	No application for survey by a Board of Trade surveyor was made.
		Cassowary	1	G. Reynolds and J. Drew, esqrs., Weymouth Petty Sessions.	22 Jan. ,,	28 days	Pleaded illness, which doctor proved was untrue.	ditto	ditto	
		W. H. Rendall	4	J. Drew and G. Reynolds, esqrs., Weymouth Petty Sessions.	30 May ,,	2 months	Ship alleged leaky	ditto	ditto	Survey made by Board of Trade surveyor; vessel was found to seaworthy.
Poole Town Prison	1873	Eliza	1	H. Hamilton and Joseph Harker, esqrs., Police Court.	7 May 1873	14 days	No reason given; both had been drinking, and neglected the orders of masters.	ditto	ditto	No application for survey by a Board of Trade surveyor was made in these cases.
		Eagle	1	H. Hamilton and F. T. Rogers, esqrs., Police Court.	12 Aug. ,,	7 days		ditto	ditto	
	1874	Nil	—	—	—	—	—	—	—	
DURHAM:										
Durham County Prison	1873	Jane Gray	1	J. B. Dale and E. Moore, esqrs., South Shields.	6 Jan. 1873	1 month	Not stated	Not stated	Not stated	
		Iron Cross	1	T. Glover and E. Moore, esqrs., South Shields.	8 Jan. ,,	6 weeks	ditto	ditto	ditto	
		St. Cuthbert	4	Ditto	10 Jan. ,,	4 weeks	ditto	ditto	ditto	
		Black Swan	1	Ditto	10 Jan. ,,	8 weeks	ditto	ditto	ditto	
		Hannah Maria	1	Ditto	10 Jan. ,,	8 weeks	ditto	ditto	ditto	
		Chimborazo	1	Ditto	10 Jan. ,,	6 weeks	ditto	ditto	ditto	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Arica	1	T. Glover and W. James, esqrs., South Shields.	17 Jan. ,,	6 weeks	ditto	ditto	ditto	
		Golden Age	3	J. Young and W. James, esqrs., South Shields.	28 Jan. ,,	6 weeks	ditto	ditto	ditto	
		Victory	5	T. Glover and E. Moore, esqrs., South Shields.	29 Jan. ,,	6 weeks	ditto	ditto	ditto	
		Tasso	3	Ditto	31 Jan. ,,	1 month	ditto	ditto	ditto	
		Black Prince	1	G. Hudson and H. R. A. Johnson, esqrs., Sunderland.	8 Feb. ,,	2 months	ditto	ditto	ditto	
		Abbot	1	W. E. Surtees, esq., West Hartlepool.	10 Feb. ,,	1 month	ditto	ditto	ditto	

Rays of Light	1	A. G. M'Kenzie and G. R. Booth, esqrs., Sunderland.	11 Feb. „	12 weeks	ditto	ditto	ditto	No application for survey by a Board of Trade surveyor was made in any of these cases.
Uncas	1	W. James and W. Black, esqrs., South Shields.	14 Feb. „	6 weeks	ditto	ditto	ditto	
Philadelphia	1	J. Young and W. Black, esqrs., South Shields.	21 Feb. „	8 weeks	ditto	ditto	ditto	
Tagus	1	W. James and W. Black, esqrs., South Shields.	17 Feb. „	6 weeks	ditto	ditto	ditto	
Ribston	1	J. J. Kayll and J. Potts, esqrs., Sunderland.	7 Mar. „	7 days	ditto	ditto	ditto	
Josephine	1	W. Thompson and R. Elwin, esqrs., Sunderland.	18 Mar. „	6 weeks	ditto	ditto	ditto	
Triad	1	T. Glover and J. Young, esqrs., South Shields.	19 Mar. „	6 weeks	ditto	ditto	ditto	
River Side	1	T. Hutchinson and G. Lockwood, esqrs., Stockton.	7 April „	1 month	ditto	ditto	ditto	
Fire Fly Brothers	3	W. Black and J. L. Hall, esqrs., South Shields.	28 Mar. „	1 month	ditto	ditto	ditto	
Cyprus	1	S. Alcock and A. Common, esqrs., Sunderland.	2 April „	8 weeks	ditto	ditto	ditto	
Tasso	1	T. Glover and J. Young, esqrs., South Shields.	7 April „	6 weeks	ditto	ditto	ditto	
Ullswater	2	T. Glover and W. James, esqrs., South Shields.	9 April „	8 weeks	ditto	ditto	ditto	
Shepherd	1	T. Glover and J. Young, esqrs., South Shields.	10 April „	8 weeks	ditto	ditto	ditto	
Farnley Hall	1	R. Oldham, esq., West Hartlepool	12 April „	1 month	ditto	ditto	ditto	
Fulmer	1	E. G. Waldy and G. Lockwood, esqrs., Stockton.	18 April „	21 days	ditto	ditto	ditto	
Rupert	1	A. G. M'Kenzie and H. O. Bowman, esqrs., Sunderland.	22 April „	4 weeks	ditto	ditto	ditto	
Dolphin	1	R. Oldham, esq., West Hartlepool	23 April „	21 days	ditto	ditto	ditto	
Kathleen Mary	1	T. Glover and E. Moore, esqrs., South Shields.	25 April „	4 weeks	ditto	ditto	ditto	
Amphitrite	1	T. Glover and W. Black, esqrs., South Shields.	5 May „	6 weeks	ditto	ditto	ditto	
Ditto	1	T. Glover and W. James, esqrs., South Shields.	6 May „	6 weeks	ditto	ditto	ditto	
Brockham	1	Ditto	15 May „	6 weeks	ditto	ditto	ditto	
Roderick Hay	3	T. Glover and J. L. Hall, esqrs., South Shields.	16 May „	6 weeks	ditto	ditto	ditto	
Patriotto	1	W. Gray, West Hartlepool	20 May „	14 days	ditto	ditto	ditto	
Emma	1	J. Young and J. L. Hall, esqrs., South Shields.	21 May „	10 weeks	ditto	ditto	ditto	
Peri	4	Ditto	21 May „	10 weeks	ditto	ditto	ditto	
Sundew	1	J. Young and W. Black, esqrs., South Shields.	23 May „	6 weeks	ditto	ditto	ditto	
Strathey	1	Ditto	23 May „	14 days	ditto	ditto	ditto	
Lusitania	1	W. James and J. Strachan, esqrs., South Shields.	26 May „	10 weeks	ditto	ditto	ditto	
Spring	1	J. Potts and G. R. Booth, esqrs., Sunderland.	18 June „	1 month	ditto	ditto	ditto	
Scotia	1	T. Glover and H. Nelson, esqrs., South Shields.	20 June „	4 weeks	ditto	ditto	ditto	
Faid Rabani	1	A. G. M'Kenzie and A. Common, esqrs., Sunderland.	27 June „	8 weeks	ditto	ditto	ditto	
Mary Spencer	1	W. James and J. L. Hall, esqrs., South Shields.	28 June „	10 weeks	ditto	ditto	ditto	
Juno	1	Ditto	1 July „	2 months	ditto	ditto	ditto	
Valkyrien	3	J. Lindsay and A. Common, esqrs., Sunderland.	2 July „	6 weeks	ditto	ditto	ditto	
Eleanora	1	J. Laing and J. J. Kayll, esqrs., Sunderland.	9 July „	10 weeks	ditto	ditto	ditto	

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DURHAM—*continued.*								£. s. d.	£. s. d.	
Durham County Prison—*continued.*	1873	Midlothian	1	J. L. Hall and A. Stevenson, esqrs., South Shields.	28 July 1873	1 month	That he had leave until the day the ship sailed, when he was late.	Not stated	Not stated	
		Margaret Elizabeth	1	T. Glover and A. Stevenson, esqrs., South Shields.	1 Aug. „	5 weeks	Not stated	ditto	ditto	
		Emperor	1	S. Alcock and R. M. Hudson, esqrs., Sunderland.	8 Aug. „	1 month	ditto	ditto	ditto	
		Cavalier	3	G. Potts and W. James, esqrs., South Shields.	9 Aug. „	12 weeks	ditto	ditto	ditto	
		Harewood	1	T. Glover and A. Stevenson, esqrs., South Shields.	13 Aug. „	14 days	ditto	ditto	ditto	
		Columba	1	A. G. M'Kenzie and G. R. Booth, esqrs., Sunderland.	18 Aug. „	10 weeks	ditto	ditto	ditto	
		Good Desire	1	A. G. M'Kenzie and H. O. Bowman, esqrs., Sunderland.	28 Aug. „	1 month	ditto	ditto	ditto	
		Messenger	1	E. Moore and A. Stevenson, esqrs., South Shields.	22 Sept. „	6 weeks	ditto	ditto	ditto	
		Ermina	1	J. L. Hall and A. Stevenson, esqrs., South Shields.	26 Sept. „	8 weeks	ditto	ditto	ditto	
		Bivouac	1	J. Strachan and R. Imeary, esqrs., South Shields.	29 Sept. „	6 weeks	ditto	ditto	ditto	
		Helme Park	1	J. L. Hall and R. Imeary, esqrs., South Shields.	3 Oct. „	4 weeks	ditto	ditto	ditto	
		Emma Eden	1	W. James and J. Broughton, esqrs., South Shields.	4 Oct. „	8 weeks	ditto	ditto	ditto	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Ancott	4	W. C. Ward Jackson, esq., West Hartlepool.	13 Oct. „	14 days	ditto	ditto	ditto	
		Lord Collingwood	1	T. Glover and J. Broughton, esqrs., South Shields.	17 Oct. „	4 weeks	Drinking	ditto	ditto	
		Rowena	1	T. Glover and J. L. Hall, esqrs., South Shields.	20 Oct. „	1 month	Not stated	ditto	ditto	
		F. T. Barry	1	J. Strachan and J. L. Hall, esqrs., South Shields.	27 Oct. „	6 weeks	ditto	ditto	ditto	
		Argo	1	A. G. M'Kenzie and J. J. Kayll, esqrs., Sunderland.	11 Nov. „	1 month	ditto	ditto	ditto	
		Webfoot	7	T. Glover and A. Stevenson, esqrs., South Shields.	17 Nov. „	8 weeks	Drinking	ditto	ditto	
		Vivid	1	J. Broughton and W. James, esqrs., South Shields.	18 Nov. „	8 weeks	Not stated	ditto	ditto	
		Castor	1	J. L. Hall and E. Moore, esqrs., South Shields.	19 Nov. „	4 weeks	ditto	ditto	ditto	
		Wonder	1	W. C. Ward Jackson, esq., West Hartlepool.	2 Dec. „	12 weeks	ditto	ditto	ditto	
		Samuel Beal	1	Ditto	2 Dec. „	12 weeks	ditto	ditto	ditto	
		Catherine Jane	1	A. G. M'Kenzie and J. Potts, esqrs., Sunderland.	5 Dec. „	4 weeks	ditto	ditto	ditto	
		Ditto	1	Ditto	5 Dec. „	8 weeks	ditto	ditto	ditto	
		Bomarsund	1	T. Glover and J. Broughton, esqrs., South Shields.	26 Dec. „	6 weeks	ditto	ditto	ditto	
		City of Durham	1	A. G. M'Kenzie and R. M. Hudson, esqrs., Sunderland.	30 Dec. „	10 weeks	ditto	ditto	ditto	

1874	Margaret and Elizabeth.	1	J. Strachan and W. Black, esqrs., South Shields.	7 Jan.	1874	2 months	ditto	ditto	ditto	
	John Straker	3	E. Moore and J. Broughton, esqrs., South Shields.	12 Jan.	„	6 weeks	Drinking	ditto	ditto	
	Newcastle	1	J. Young and J. L. Hall, esqrs., South Shields.	23 Jan.	„	1 month	Not stated	ditto	ditto	
	George Booth	2	H. Nelson and J. B. Dale, esqrs., South Shields.	28 Jan.	„	4 weeks	ditto	ditto	ditto	
	Ella	1	T. Glover and W. James, esqrs., South Shields.	4 Feb.	„	4 weeks	ditto	ditto	ditto	
	Parthena	1	T. Glover and H. Nelson, esqrs., South Shields.	6 Feb.	„	2 months	ditto	ditto	ditto	
	Ionian	1	Ditto	6 Feb.	„	1 month	ditto	ditto	ditto	
	Medina	1	A. Stevenson and J. Broughton, esqrs., South Shields.	9 Feb.	„	2 months	ditto	ditto	ditto	
	Mariner	1	S. Alcock and R. M. Hudson, esqrs., Sunderland.	2 Mar.	„	10 weeks	ditto	ditto	ditto	
	Ullswater	1	T. Glover and J. Strachan, esqrs., South Shields.	4 Mar.	„	4 weeks	ditto	ditto	ditto	
	Clara Barbayan	1	S. Alcock and R. M. Hudson, esqrs., Sunderland.	6 Mar.	„	10 weeks	ditto	ditto	ditto	
	Livingstone	2	E. Moore and J. L. Hall, esqrs., South Shields.	9 Mar.	„	6 weeks	Insufficient clothing, and wanted more advance.	ditto	ditto	
	Pride of the Wear	1	R. Elwin and W. Nicholson, esqrs., Sunderland.	9 Mar.	„	10 weeks	Not stated	ditto	ditto	
	May Queen	1	J. L. Hall and E. Moore, esqrs., South Shields.	11 Mar.	„	4 weeks	ditto	ditto	ditto	
	Rainton	1	R. Imeary and J. Young, esqrs., South Shields.	16 Mar.	„	7 days	ditto	ditto	ditto	
	Wings of the Morning	1	R. Oldham, esq., West Hartlepool	18 Mar.	„	1 month	ditto	ditto	ditto	No application for survey by a Board of Trade surveyor was made in any of these cases.
	Felicity	2	T. Glover and J. Young, esqrs., South Shields.	18 Mar.	„	8 weeks	ditto	ditto	ditto	
	Mercury	1	Ditto	18 Mar.	„	4 weeks	ditto	ditto	ditto	
	Eleanor	1	S. Alcock and J. G. M'Kenzie, esqrs., Sunderland.	23 Mar.	„	4 weeks	ditto	ditto	ditto	
	Rescue	3	G. Hudson and H. R. A. Johnson, esqrs., Sunderland.	4 April	„	2 months	ditto	ditto	ditto	
	Bolckow	1	S. Alcock and H. O. Bowman, esqrs., Sunderland.	14 April	„	10 weeks	ditto	ditto	ditto	
	Earnest	1	S. Alcock and A. Common, esqrs., Sunderland.	17 April	„	10 weeks	ditto	ditto	ditto	
	Medora	1	J. Broughton and H. Nelson, esqrs., South Shields.	24 April	„	8 weeks	ditto	ditto	ditto	
	Ocean Sprite	1	J. Strachan and W. Black, esqrs., South Shields.	27 April	„	6 weeks	ditto	ditto	ditto	
	Ditto	2	W. James and J. Strachan, esqrs., South Shields.	29 April	„	6 weeks	ditto	ditto	ditto	
	Warrior	1	A. G. M'Kenzie and G. R. Booth, esqrs., Sunderland.	30 April	„	6 weeks	ditto	ditto	ditto	
	No name	1	J. White, esq., Hartlepool	21 May	„	6 weeks	ditto	ditto	ditto	
	Ann Staniland	1	George Pyman, esq., West Hartlepool.	28 May	„	2 months	ditto	ditto	ditto	
	Rowena	2	A. Stevenson and J. L. Hall, esqrs., South Shields.	3 June	„	6 weeks	Drinking	ditto	ditto	
	Quebec Packet	1	Ditto	5 June	„	1 month	Not stated	ditto	ditto	
	Polina	1	G. Hudson and H. R. A. Johnson, esqrs., Sunderland.	13 June	„	6 weeks	ditto	ditto	ditto	
	Solway	1	T. Hutchinson and G. Lockwood, esqrs., Stockton.	19 June	„	21 days	ditto	ditto	ditto	
	Catherine and Hannah.	1	J. L. Hall and E. Moore, esqrs., South Shields.	29 June	„	1 month	ditto	ditto	ditto	
	Earl of Sunderland	1	J. White, esq., Hartlepool	29 June	„	1 month	ditto	ditto	ditto	

RETURN of the Crews of Merchant Ships which have been Committed to Prison in the Years 1873 and 1874, for Refusing to proceed to Sea, &c.—*continued.*

COUNTY AND NAME OF PRISON.	Year.	NAME OF SHIP.	Number of Men Committed to Prison.	By whom Committed, giving name of Petty Sessions.	Date of Conviction.	Term of Imprisonment.	Reasons alleged by Seamen for Refusing to proceed to Sea.	Wages Advanced. Amount received in Advance Notes.	Wages Advanced. Amount received in Cash.	Whether Committing Magistrate ordered Survey by a Board of Trade Surveyor.
DURHAM—*continued.*								£. s. d	£. s. d.	
Durham County Prison—*continued.*	1874	Amphitrite	1	A. Stevenson and E. Moore, esqrs., South Shields.	3 July 1874	1 month	Not stated	Not stated	Not stated	
		Plassey	1	A. Common and H. O. Bowman, esqrs., Sunderland.	10 July „	14 days	ditto	ditto	ditto	
		Rydal	1	W. Thompson and J. Lindsay, esqrs., Sunderland.	16 July „	1 month	ditto	ditto	ditto	
		Douglas	1	A. G. M'Kenzie and G. R. Booth, esqrs., Sunderland.	24 July „	6 weeks	ditto	ditto	ditto	
		No name	1	T. Glover and E. Moore, esqrs., South Shields.	31 July „	8 weeks	ditto	ditto	ditto	
		Cores	1	S. Alcock and A. Common, esqrs., Sunderland.	31 July „	6 weeks	ditto	ditto	ditto	
		Delta	1	T. Glover and J. Broughton, esqrs., South Shields.	1 Aug. „	12 weeks	ditto	ditto	ditto	
		Elf	4	T. Glover and J. Young, esqrs., South Shields.	3 Aug. „	6 weeks	ditto	ditto	ditto	
		Monkseaton	1	J. Young and R. Imeary, esqrs., South Shields.	5 Aug. „	7 days	Drinking	ditto	ditto	
		Lady Mary	1	R. Oldham, esq., West Hartlepool	12 Aug. „	10 weeks	Not stated	ditto	ditto	
		Eagle	1	W. James and J. Broughton, esqrs., South Shields.	19 Aug. „	6 weeks	Afraid of being ill-treated	ditto	ditto	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Roseola	1	A. Bethune and J. B. Eminson, esqrs., Seaham Harbour.	21 Aug. „	2 months	Not stated	ditto	ditto	
		Ermina	2	T. Glover and E. Moore, esqrs., South Shields.	28 Aug. „	8 weeks	Drinking	ditto	ditto	
		No name	1	S. Alcock and A. Common, esqrs., Sunderland.	9 Sept. „	6 weeks	Not stated	ditto	ditto	
		Irwell	1	W. James and W. Black, esqrs., South Shields.	14 Sept. „	10 weeks	ditto	ditto	ditto	
		Bothalwood	1	T. Glover and W. James, esqrs., South Shields.	17 Sept. „	10 weeks	ditto	ditto	ditto	
		Broomshields	1	T. Glover and A. Stevenson, esqrs., South Shields.	21 Sept. „	4 weeks	ditto	ditto	ditto	
		Isabel	2	W. James and J. Broughton, esqrs., South Shields.	29 Sept. „	6 weeks	ditto	ditto	ditto	
		Mary	1	A. G. M'Kenzie and A. Common, esqrs., Sunderland.	29 Sept. „	1 month	ditto	ditto	ditto	
		Irwell	2	T. Glover and R. Imeary, esqrs., South Shields.	30 Sept. „	4 weeks	ditto	ditto	ditto	
		Panther	1	Ditto	30 Sept. „	4 weeks	ditto	ditto	ditto	
		Ditto	2	J. Broughton and H. Nelson, esqrs., South Shields.	9 Oct. „	1 month	ditto	ditto	ditto	
		Stella Lodge	1	T. Glover and W. James, esqrs., South Shields.	13 Oct. „	10 weeks	ditto	ditto	ditto	
		Ditto	2	Ditto	13 Oct. „	6 weeks	ditto	ditto	ditto	

		Acacia	1	G. R. Booth and J. Potts, esqrs., Sunderland.	16 Oct. „	6 weeks	ditto	ditto	ditto	No application for survey by a Board of Trade surveyor was made in any of these cases.
		No name	1	W. J. Young, esq., West Hartlepool.	26 Oct. „	1 month	ditto	ditto	ditto	
		Pacific	1	T. Glover and R. Imeary, esqrs., South Shields.	28 Oct. „	4 weeks	ditto	ditto	ditto	
		Chimborazo	2	H. Nelson and W. Black, esqrs., South Shields.	9 Nov. „	6 weeks	ditto	ditto	ditto	
		Matthew Cay	1	J. Strachan and W. Black, esqrs., South Shields.	13 Nov. „	6 weeks	ditto	ditto	ditto	
		Lady Franklin	1	J. Potts and R. Elwin, esqrs., Sunderland.	16 Nov. „	10 weeks	ditto	ditto	ditto	
		Ditto	1	Ditto	16 Nov. „	12 weeks	ditto	ditto	ditto	
		Amphitrite	1	J. Broughton and J. L. Hall, esqrs., South Shields.	18 Nov. „	6 weeks	ditto	ditto	ditto	
		Vanguard	1	J. Broughton and R. Imeary, esqrs., South Shields.	23 Nov. „	14 days	ditto	ditto	ditto	
		George Batters	4	J. Young and R. Imeary, esqrs., South Shields.	27 Nov. „	6 weeks	The ship to be too deep	ditto	ditto	
		Sarah B. Cann	5	J. Broughton and H. Nelson, esqrs., Shields.	30 Nov. „	6 weeks	Not stated	ditto	ditto	
		Tweed	1	H. Nelson and J. Strachan, esqrs., South Shields.	2 Dec. „	4 weeks	ditto	ditto	ditto	
		Ditto	1	Ditto	2 Dec. „	6 weeks	ditto	ditto	ditto	
		Martino Maria	1	E. Moore and J. L. Hall, esqrs., South Shields.	18 Dec. „	8 weeks	ditto	ditto	ditto	
ESSEX:										
B Essex County Prison, Springfield.	1873	William and Lydia	2	F. Hales and W. Green, esqrs., Harwich.	29 Mar. 1873	1 calendar month	No reason given	Not stated	Not stated	
		Welcome	1	J. Richmond, esq., Harwich	3 June „	14 days' hard labour	Wished to get rid of apprenticeship	ditto	ditto	
		No name	1	P. O. Papillon, esq., Colchester	23 Aug. „	14 days' hard labour	No reason given	ditto	ditto	
		Vesta	1	S. G. Vavill, esq., Witham	6 Dec. „	2 calendar months' hard labour.	ditto	ditto	ditto	
	1874	Emily	1	F. Hales and J. Richmond, esqrs., Harwich.	23 Sept. 1874	1 calendar month hard labour.	ditto	ditto	ditto	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Hewellyn	4	F. Hales and T. George, esqrs., Harwich.	24 Nov. „	4 weeks each	Rigging was insufficient, and been in collision; put into Harwich for repairs.	ditto	ditto	
		Polo	3	T. George and J. Watts, esqrs., Harwich.	31 Dec. „	1 calendar month each.	Christmas time	ditto	ditto	
		Ranger	2	Ditto	31 Dec. „	1 calendar month each.	ditto	ditto	ditto	
		Zealous	2	Ditto	31 Dec. „	1 calendar month each.	ditto	ditto	ditto	
GLOUCESTERSHIRE:										
Bristol City Bridewell Prison.	1873	Constance	1	Justices for the City and County of Bristol.	9 Jan. 1873	21 days	No defence made	Not stated	Not stated	
		Viscount Canning	1	Ditto	18 Feb. „	6 weeks	ditto	ditto	ditto	
		Constance	2	Ditto	19 June „	10 days	ditto	ditto	ditto	
		Pride of Wales	1	Ditto	23 Sept. „	1 calendar month	ditto	ditto	ditto	
		Jessie Boyle	1	Ditto	5 Nov. „	1 calendar month	ditto	ditto	ditto	
	1874	Blue Bird	3	City and County of Bristol Petty Sessions.	18 Feb. 1874	14 days	Insufficient food	ditto	ditto	
		Dora	1	Ditto	28 Mar. „	21 days	No defence made	ditto	ditto	
		Ida	1	Ditto	18 Sept. „	14 days	ditto	ditto	ditto	

RETURN of the Crews of Merchant Ships which have been Committed to Prison in the Years 1873 and 1874, for Refusing to proceed to Sea, &c.—*continued.*

COUNTY AND NAME OF PRISON.	Year.	NAME OF SHIP.	Number of Men Committed to Prison.	By whom Committed, giving Name of Petty Sessions.	Date of Conviction.	Term of Imprisonment.	Reasons alleged by Seamen for Refusing to proceed to Sea.	Wages Advanced. Amount received in Advance Notes.	Wages Advanced. Amount received in Cash.	Whether Committing Magistrate ordered Survey by a Board of Trade Surveyor.
KENT:								£. s. d.	£. s. d.	
Kent (Western Division) County Prison, Maidstone.	1873	Ithiel	1	J. H. Patteson, esq., Police Court, Greenwich.	2 Jan. 1873	28 days	No reason mentioned in the warrant.*	Not stated	Not stated	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Douglas	4	G. Taylor, esq., Chairman, Petty Sessions, Gravesend.	3 Jan. „	28 days	ditto	ditto	ditto	
		Bonnie Lass	1	D. Maude, esq., Police Court, Greenwich.	17 Mar. „	14 days	ditto	ditto	ditto	
		Ditto	1	ditto	17 Mar. „	28 days	ditto	ditto	ditto	
		Enmore	5	G. Taylor, esq., Chairman, Petty Sessions, Gravesend.	9 April „	28 days	ditto	ditto	ditto	
		Balkamah	2	E. Wates, esq., Chairman, Petty Sessions, Gravesend.	10 May „	28 days	ditto	ditto	ditto	
		Bates Family	13	G. Taylor, esq., Chairman, Petty Sessions, Gravesend.	13 May „	21 days	ditto	ditto	ditto	
		Fitzroy	5	ditto	20 June „	28 days	ditto	ditto	ditto	
		Fisher	1	J. H. Patteson, esq., Police Court, Greenwich.	15 Nov. „	28 days	ditto	ditto	ditto	
		Frederick	1	ditto	22 Nov. „	28 days	ditto	ditto	ditto	
		Emerald	1	J. L. Edwards, esq., Chairman, Petty Sessions, Rochester.	6 Dec. „	7 days	ditto	ditto	ditto	
		Calcutta	1	N. Lake, esq., Chairman, Petty Sessions, Gravesend.	26 Dec. „	28 days	ditto	ditto	ditto	
	1874	Capiolani	2	G. Taylor, esq., Chairman, Petty Sessions, Gravesend.	13 Mar. 1874	28 days	No record	ditto	ditto	
		Robert Stride	1	J. L. Edwards, esq., Chairman, Petty Sessions, Rochester.	17 Mar. „	21 days	Pleaded guilty; no reason alleged	ditto	ditto	
		Fawn	1	J. H. Patteson, esq., Police Court, Greenwich.	21 Sept. „	28 days	An apprentice who refused to go to sea because he did not like the cooking.	ditto	ditto	
		Gilroy	1	T. Troughton, esq., Chairman, Petty Sessions, Gravesend.	28 Oct. „	21 days	Apprentice; deserted	ditto	ditto	
		Vivid	1	J. Balguy, esq., Police Court, Greenwich.	5 Nov. „	7 days	An apprentice who ran away from his vessel; no reason alleged.	ditto	ditto	
Kent County Prison, St. Augustine's, Canterbury.	1873	Oneiza	1	George Hughes and W. J. Banks, esqrs., Petty Sessions, Deal.	24 Jan. 1873	6 weeks	Brutal conduct of captain	ditto	ditto	
		Emma	1	Peter Marten and Frederick Flint, esqrs., County Petty Sessions, Canterbury.	16 April „	14 days	None given	ditto	ditto	
	1874	Jane	1	General M'Queen and Frederick Flint, esq., County Petty Sessions, Canterbury.	23 June 1874	28 days	Did not like the appearance of the ship.	ditto	ditto	
Dover Town Prison	1873	Victory	5	E. R. Trowell and T. E. Back, esqrs., Borough of Dover.	Not convicted	On remand for 1 day	That vessel was unseaworthy.			
	1874	Nil	—	—	—	—	—	—	—	—

LANCASTER:									
Liverpool Borough Prison	1873	Khorasan	9	J. A. Picton and C. Aspinall, esqrs.	7 Jan. 1873	6 weeks	"We don't like the ship and we will not go in the ship; the bread is bad."	Not stated	Not stated	Survey made; ship perfectly seaworthy.
		Sorata	1	T. S. Raffles, esq.	9 Jan. "	6 weeks	"I have nothing to say"	ditto	ditto	
		Tycho Brahe	1	Ditto	18 Jan. "	6 weeks	Nothing said by the prisoner	ditto	ditto	
		Zoruba	1	Ditto	14 Feb. "	4 weeks	Nothing	ditto	ditto	
		Cuban	2	Ditto	6 Mar. "	6 weeks	- - - - - - -	ditto	ditto	
		Wave	1	Ditto	7 Mar. "	2 weeks	- - - - - - -	ditto	ditto	
		Danube	1	Ditto	7 Mar. "	3 weeks	"I went to shore for food."	ditto	ditto	
		Loanda	1	Ditto	13 Mar. "	6 weeks	No reason alleged	ditto	ditto	
		Altcar	1	Ditto	24 Mar. "	6 weeks	Got drunk	ditto	ditto	
		Bavarian	1	C. Aspinall, esq.	3 April "	6 weeks	He went on board and returned to shore; no reason assigned.	ditto	ditto	
		Pearl of India	2	T. S. Raffles, esq.	18 April "	6 weeks	He refused to go on board; no reason alleged.	ditto	ditto	
		Nile	2	Ditto	21 April "	10 weeks	Because the boatswain had assaulted them.	ditto	ditto	
		Ditto	5	Ditto	21 April "	8 weeks	ditto ditto	ditto	ditto	
		Guatemala	1	Ditto	21 April "	6 weeks	Received advance note for 3 *l.*, and got it cashed; not on board; got drunk.	ditto	ditto	
		Aconcagua	1	— Castellian and — Livingstone, esqrs.	1 May "	6 weeks	He said he would not go to sea in her.	ditto	ditto	
		Pomaron	2	T. S. Raffles, esq.	9 May "	8 weeks	"We have no clothes to go in."	ditto	ditto	
		St. Kilda	1	Ditto	10 May "	6 weeks	Spending the day with some friends	ditto	ditto	
		Augustine	1	Ditto	14 May "	8 weeks	Was not on board; he received an advance note for 3 *l.* 10 *s.*	ditto	ditto	
		Manhattan	1	— Lamport and — Whitley, esqrs.	22 May "	3 weeks	He said, "I am not going"	ditto	ditto	
		Arbitrator	1	H. Mansfield, esq.	31 July "	4 weeks	"I want to get my note signed"	ditto	ditto	
		Racer	1	Ditto	5 Aug. "	6 weeks	He said nothing, but refused to join	ditto	ditto	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Loch Leven Castle	1	Ditto	8 Aug. "	2 weeks	"I went to the dock; the ship had gone into the river; came back to the office and reported myself."	ditto	ditto	
		Wisconsin	1	Ditto	14 Aug. "	6 weeks	"I had a letter from my brother, and went to Bolton; I returned too late."	ditto	ditto	
		Ditto	1	Ditto	14 Aug. "	4 weeks	"I overslept myself"	ditto	ditto	
		Cheerwell	1	Ditto	29 Aug. "	3 weeks	Nothing	ditto	ditto	
		Eldorado	1	T. S. Raffles, esq.	5 Sept. "	4 weeks	Received advance note; he said, "I had no intention to neglect to proceed to sea, but could not get to know when she was going to sail."	ditto	ditto	
		Giants Causeway	1	Ditto	12 Sept. "	4 weeks	"Nothing, but I have been at the office all the time."	ditto	ditto	
		Ann Gambles	1	Ditto	25 Sept. "	6 weeks	He refused to proceed to sea; no reason alleged.	ditto	ditto	
		Furness Abbey	1	H. C. Beloe and W. W. Jones, esqrs.	27 Sept. "	1 week	Was not on board; said he was late through drink; took boat, but could not catch her.	ditto	ditto	
		Puno	1	H. Bennett and C. Aspinall, esqrs.	1 Oct. "	3 weeks	"I was sick after drink"	ditto	ditto	
		Egyptian	1	H. C. Beloe, esq.	9 Oct. "	2 weeks	He was drunk, and said he would not go to sea in her.	ditto	ditto	
		Oriente	1	T. S. Raffles, esq.	Oct. "	3 weeks	"Captain told me the ship was not going out this morning."	ditto	ditto	
		Sarah M. Smith	1	J. J. Still and J. Roberts, esqrs.	10 Oct. "	2 weeks	"I will not go in her; I was drunk when I signed."	ditto	ditto	
		Africa	1	T. S. Raffles, esq.	13 Oct. "	6 weeks	"I won't go;" he was drunk	ditto	ditto	
		Empreza	1	Ditto	14 Oct. "	6 weeks	He said the ship was wet, and found fault with the cook on board.	ditto	ditto	

* The offenders under the Merchant Shipping Act committed by justices of this Borough alleged, some of them, as a reason for refusing to proceed to sea, that the ships were not seaworthy, and others of ill-treatment; but the magistrates, in all the cases, were of opinion that the complaints were wholly groundless.

RETURN of the Crews of Merchant Ships which have been Committed to Prison in the Years 1873 and 1874, for Refusing to proceed to Sea, &c.—*continued.*

COUNTY AND NAME OF PRISON.	Year.	NAME OF SHIP.	Number of Men Committed to Prison.	By whom Committed, giving Name of Petty Sessions.	Date of Conviction.	Term of Imprisonment.	Reasons alleged by Seamen for Refusing to proceed to Sea.	Wages Advanced. Amount received in Advance Notes.	Wages Advanced. Amount received in Cash.	Whether Committing Magistrate ordered Survey by a Board of Trade Surveyor.
LANCASTER—*contd.*								£. s. d.	£. s. d.	
Liverpool Borough Prison —*continued.*	1873	Sarah M. Smith	1	T. S. Raffles, esq.	14 Oct. 1873	3 weeks	Was drunk	Not stated	Not stated	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Italian Hero	1	Ditto	24 Oct. „	4 weeks	Was sober, but refused to go in the ship.	ditto	ditto	
		Mimosa	1	Ditto	27 Oct. „	6 weeks	—	ditto	ditto	
		Tinto	1	Ditto	1 Nov. „	4 weeks	"I am sorry for it; I was drunk"	ditto	ditto	
		Maggie Gross	1	Ditto	1 Nov. „	2 weeks	He was not well, and went to the hospital.	ditto	ditto	
		Oriole	1	Ditto	5 Nov. „	8 weeks	He said, "I was too late"	ditto	ditto	
		Student	1	Ditto	10 Nov. „	4 weeks	Drunk	ditto	ditto	
		Corcovado	1	Ditto	13 Nov. „	6 weeks	"I came on board in the morning;" he was drunk.	ditto	ditto	
		Winsloe	1	Ditto	18 Nov. „	3 weeks	"I am very sorry for what has happened; I was sick."	ditto	ditto	
		Ditto	1	Ditto	25 Nov. „	3 weeks	He sailed in ship, and deserted at Cardiff; said nothing.	ditto	ditto	
		Californian	1	Ditto	2 Dec. „	4 weeks	He went on board, but did not think they were going out.	ditto	ditto	
		Sultan	1	Ditto	3 Dec. „	6 weeks	Refused to proceed; no reason alleged.	ditto	ditto	
		Sirian Star	1	— Brancker and D. MacIver, esqrs.	10 Dec. „	4 weeks	He said he would not go in her	ditto	ditto	
		Caledonian	1	T. S. Raffles, esq.	13 Dec. „	1 weeks	He said, "I have no clothes"	ditto	ditto	
		Magdala	1	Ditto	23 Dec. „	2 weeks	"Captain said, the vessel was not going."	ditto	ditto	
		Persian	1	Ditto	26 Dec. „	3 weeks	"Sent for boatswain's clothes, and when I returned the ship had gone."	ditto	ditto	
		Orizira	1	Ditto	27 Dec. „	3 weeks	Drunk	ditto	ditto	
		Cairo	1	Ditto	29 Dec. „	3 weeks	He said, "It is all right"	ditto	ditto	
		Green Jacket	1	Ditto	29 Dec. „	6 weeks	The boarding master kept him	ditto	ditto	
	1874	Arjuchucha	1	Ditto	15 Jan. 1874	6 weeks	He was drunk, and went to see his mother.	ditto	ditto	
		Ardmore	1	Ditto	21 Jan. „	3 weeks	No reason alleged	ditto	ditto	
		Gaelic	1	Ditto	22 Jan. „	1 week	ditto	ditto	ditto	
		Patagonia	2	Ditto	29 Jan. „	6 weeks	Got drunk and missed ship	ditto	ditto	
		Algiers	1	Ditto	29 Jan. „	6 weeks	The fault of boarding-house keeper	ditto	ditto	
		Jane Steele	1	Ditto	30 Jan. „	6 weeks	No reason alleged	ditto	ditto	
		Algiers	1	Ditto	30 Jan. „	6 weeks	A man told me she was not going to sail.	ditto	ditto	
		London, ss.	1	Ditto	31 Jan. „	4 weeks.				
		Rhone	1	Ditto	17 Feb. „	3 weeks	He was not well, and tried to escape.	ditto	ditto	
		Nereus	1	Ditto	23 Feb. „	4 weeks	—	ditto	ditto	
		Canopus	1	Ditto	3 Mar. „	3 weeks	His blanket was stolen, and the mate hit him; he was drunk.	ditto	ditto	
		Oceanic	1	Ditto	7 Mar. „	2 weeks	"I must have got drunk; I did not intend losing her."	ditto	ditto	
		Elmina	1	Ditto	10 Mar. „	6 weeks	He said, "I would serve six weeks rather than go in her."	ditto	ditto	

Edina	1	Ditto	11 Mar.	„	8 weeks	- - - - - - -	ditto	ditto	
Luxor	1	Ditto	12 Mar.	„	2 weeks	"The mate told me she was not going"	ditto	ditto	
Donato	1	Ditto	14 Mar.	„	3 weeks	He had hurt himself and was not able to go.	ditto	ditto	
Pernambuco	1	Ditto	14 Mar.	„	2 weeks	- - - - - - -	ditto	ditto	
Tenby Castle	1	Ditto	17 Mar.	„	6 weeks	Refused to proceed, and said he would not go in her.	ditto	ditto	
Memnon	1	— Castellian and — Browne, esqrs.	21 Mar.	„	6 weeks	He said he was looking for his clothes, and missed the ship.	ditto	ditto	
Tenby Castle	1	T. S. Raffles, esq.	23 Mar.	„	6 weeks	Reason not alleged	ditto	ditto	
India	1	Ditto	25 Mar.	„	4 weeks	He had quarrelled; was drunk	ditto	ditto	
Chimborazo	1	Ditto	9 April	„	6 weeks	Got drunk	ditto	ditto	
Crimean	1	Ditto	10 April	„	3 weeks	"I went on board and was told she was not going."	ditto	ditto	
Leamington	1	Ditto	13 April	„	4 weeks	Drunk	ditto	ditto	
Oceanic	1	— Mills and — Browne, esqrs.	16 April	„	2 weeks	"I was sick"	ditto	ditto	
City of Sparta	1	T. S. Raffles, esq.	29 April	„	2 weeks	"I came too late"	ditto	ditto	
Orontes	1	Ditto	16 May	„	3 weeks	No reason alleged	ditto	ditto	
Ocean Phantom	1	Ditto	19 May	„	2 weeks	"I overslept myself"	ditto	ditto	
Stowell Brown	1	Ditto	3 June	„	6 weeks	- - - - - - -	ditto	ditto	
Copernicus, ss.	1	Ditto	4 June	„	6 weeks	"I missed the ship"	ditto	ditto	
Twilight	1	Ditto	5 June	„	8 weeks	He was drunk	ditto	ditto	
Huddersfield	1	Ditto	22 June	„	6 weeks	"I got drunk"	ditto	ditto	
Ditto	1	Ditto	22 June	„	4 weeks	"I lost my way"	ditto	ditto	
City of Manchester	1	— Corbally and — Lister, esqrs.	24 June	„	4 weeks	"I did not think the ship was going to sail this morning."	ditto	ditto	
Africa, ss.	1	T. S. Raffles, esq.	29 June	„	2 weeks	"I came too late"	ditto	ditto	
Hector, ss.	1	Ditto	29 June	„	6 weeks	- - - - - - -	ditto	ditto	
Africa, ss.	1	Ditto	1 July	„	4 weeks	"I came too late"	ditto	ditto	
Ditto	1	Ditto	3 July	„	8 weeks	- ditto - - - - -	ditto	ditto	
Cuban, ss.	1	Ditto	8 July	„	3 weeks	"I went down and was too late"	ditto	ditto	
Ditto	1	C. Aspinall and W. W. Jones, esqrs.	8 July	„	4 weeks	"I went down to the dock and missed her."	ditto	ditto	
Whampoa	1	T. S. Raffles, esq.	9 July	„	6 weeks	Was drunk, and had no bunk	ditto	ditto	
Belgium	1	Ditto	10 July	„	6 weeks	No reason; was drunk	ditto	ditto	
Wyoming	1	Ditto	16 July	„	2 weeks	"I was drunk"	ditto	ditto	
Chilè	1	H. Mansfield, esq.	23 July	„	4 weeks	No reason alleged	ditto	ditto	
Bolivar	1	P. J. Garnett, esq.	5 Aug.	„	3 weeks	He said he was allowed to go on shore, and missed her.	ditto	ditto	
River Indus	1	H. Mansfield, esq.	11 Aug.	„	4 weeks	He did not think she would go so soon.	ditto	ditto	
Valta	1	Ditto	17 Aug.	„	6 weeks	No reason alleged	ditto	ditto	
Vespasian	1	Ditto	25 Aug.	„	6 weeks	He said, "It is my own fault"	ditto	ditto	
Seatoller	1	Ditto	24 Aug.	„	4 weeks	No reason alleged	ditto	ditto	
Danube	1	T. S. Raffles, esq.	31 Aug.	„	3 weeks	He said, "It is many a man's fault"	ditto	ditto	
Senegal	1	Ditto	31 Aug.	„	6 weeks	Was drunk	ditto	ditto	
Warree	1	Ditto	7 Sept.	„	6 weeks	Refused to go	ditto	ditto	
Pernambuco	1	Ditto	11 Sept.	„	6 weeks	His wife prevented him	ditto	ditto	
Finisterre	1	Ditto	17 Sept.	„	6 weeks	Was drunk, and refused to go on board.	ditto	ditto	
Douro	1	Ditto	21 Sept.	„	2 weeks	Drunk, and was late	ditto	ditto	
State of Louisiania	1	Ditto	28 Sept.	„	4 weeks	Drunk, and refused to go on board	ditto	ditto	
Baltic, ss.	1	Ditto	2 Oct.	„	2 weeks	Neglected to join	ditto	ditto	
Victoria Nyanza	1	Ditto	26 Oct.	„	6 weeks	Got drunk	ditto	ditto	
Celista Haws	4	Ditto	26 Oct.	„	6 weeks	Refused to proceed, stating they were apprehensive the captain would run the ship ashore.	ditto	ditto	
Herbert	3	Ditto	29 Oct.	„	6 weeks	Were drunk and fighting, and said, they would not go.	ditto	ditto	
Vixen	1	Ditto	30 Oct.	„	6 weeks	No reason alleged	ditto	ditto	

No application for survey by a Board of Trade surveyor was made in any of these cases.

RETURN of the Crews of Merchant Ships which have been Committed to Prison in the Years 1873 and 1874, for Refusing to proceed to Sea, &c.—*continued.*

COUNTY AND NAME OF PRISON.	Year.	NAME OF SHIP.	Number of Men Committed to Prison.	By whom Committed, giving Name of Petty Sessions.	Date of Conviction.	Term of Imprisonment.	Reasons alleged by Seamen for Refusing to proceed to Sea.	Wages Advanced. Amount received in Advance Notes.	Wages Advanced. Amount received in Cash.	Whether Committing Magistrate ordered Survey by a Board of Trade Surveyor.
LANCASTER—*cont^d.*										
Liverpool Borough Prison —*continued.*	1874	Jerome, s.s.	1	T. S. Raffles, esq.	30 Oct. 1874	6 weeks	He had been ill-used and would not go.	Not stated	Not stated	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Chrysolite	1	Ditto	2 Nov. „	3 weeks	Refused to proceed; no reason alleged.	ditto	ditto	
		Venetian	1	— Livingstone and — Arkle, esqrs.	4 Nov. „	6 weeks	It was through drink	ditto	ditto	
		Scandivanian	2	T. S. Raffles, esq.	4 Nov. „	1 week	"We have nothing to say"	ditto	ditto	
		Prince Rudolph	13	— Castellian and — Myers, esqrs.	13 Nov. „	10 weeks	Refused to go because of a leak	ditto	ditto	Survey made; ship perfectly sound; water caused by wet salt.
		Abbotsford	2	T. S. Raffles, esq.	16 Nov. „	2 weeks	"I am very sorry"	ditto	ditto	
		Lisbon	1	C. Aspinall and — Lister, esqrs.	20 Nov. „	3 weeks	Said, he had been on board all day	ditto	ditto	
		Gilbert Thompson	2	T. S. Raffles, esq.	27 Nov. „	6 weeks	Got drunk	ditto	ditto	
		Beltiste	1	Ditto	30 Nov. „	2 weeks	"I left owing to ill-treatment"	ditto	ditto	
		Jamaica	1	Ditto	5 Dec. „	3 weeks	"I could not help it; I am very sorry."	ditto	ditto	
		Amapolin	1	Ditto	7 Dec. „	6 weeks	Got drunk	ditto	ditto	
		Pomeron	1	Ditto	9 Dec. „	3 weeks	Neglected to join; was sober	ditto	ditto	
		Gilbert Thompson	1	Ditto	9 Dec. „	6 weeks	"I want to go in the steamer"	ditto	ditto	
		City of Baltimore	1	Ditto	16 Dec. „	10 weeks	No reason alleged	ditto	ditto	
		Bride of Lorne	1	Ditto	16 Dec. „	8 weeks	ditto	ditto	ditto	
		Sultana	1	Ditto	16 Dec. „	6 weeks	ditto	ditto	ditto	
		Ditto	1	Ditto	16 Dec. „	3 weeks	ditto	ditto	ditto	
		Cuba	1	Ditto	24 Dec. „	3 weeks	Refused to proceed; was sober	ditto	ditto	
		George Gilroy	2	Ditto	26 Dec. „	3 weeks	Refused to go; no reason alleged	ditto	ditto	
LINCOLNSHIRE:		Viola	1	Ditto	26 Dec. „	8 weeks	No reason alleged	ditto	ditto	
Lincoln County Prison (Parts of Lindsey).	1873	May Queen	1	J. Skelton and J. Wintringham, esqrs., Borough of Great Grimsby.	2 Jan. 1873	14 days	Got drunk and refused to go to sea; no other reason; fishing smack.	Not stated	Not stated	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Knight Errant	1	J. Skelton and J. Treed, esqrs., Borough of Great Grimsby.	5 May „	21 days	Got an advance; got drunk and refused to proceed to sea; no other reason; fishing smack.	ditto	ditto	
		Iona	1	Ditto	5 May „	21 days	ditto ditto	ditto	ditto	
		Dawn	1	Ditto	26 May „	21 days	Got drunk and absented himself; no other reason; fishing smack.	ditto	ditto	
		Abraham Lincoln	1	Ditto	26 May „	3 weeks	Fishing smack; got drunk and absented himself; no other reason.	ditto	ditto	
		Penelope	1	J. Wintringham and H. Bennett, esqrs., Borough of Great Grimsby.	25 Sept. „	14 days	Steam ship; got drunk and refused to proceed to sea; no other reason.	ditto	ditto	
		Ann Keziah	2	J. Wintringham and J. Skelton, esqrs., Borough of Great Grimsby.	20 Nov. „	21 days	Fishing smack; got drunk and refused to proceed to sea; no other reason.	ditto	ditto	
		Messenger	1	Ditto	26 Nov. „	21 days	ditto ditto	ditto	ditto	
	1874	Young Mechanic	1	G. Skelton and J. Skelton, esqrs., Borough of Great Grimsby.	2 Jan. 1874	21 days	Drunkenness	ditto	ditto	
		Sapta	1	J. Treed and J. Skelton, esqrs., Borough of Great Grimsby.	8 Jan. „	1 calendar month	Wanted to get clear whilst in the Humber, from bad weather.	ditto	ditto	
		Hydras	1	Ditto	16 Feb. „	1 calendar month	ditto ditto	ditto	ditto	

		Ann - - -	1	H. Bennett and J. Skelton, esqrs., Borough of Great Grimsby.	25 Sept.	„	1 calendar month -	- ditto - - - - -	ditto -	ditto -	No application for survey by a Board of Trade surveyor was made in any of these cases.
Lincoln County Prison Spalding (Parts of Holland).	1873	Flora - - -	1	Colonel C. T. J. Moore and T. Garfit, esq., Boston Petty Sessions.	21 Nov.	1873	8 weeks - -	Apprehended on a charge of stealing clothing belonging to another seaman on board, and for desertion; convicted of desertion.	ditto -	ditto -	
		Caledonia - -	2	F. L. Hopkins and T. Garfit, esqrs.	11 Dec.	„	1 month each -	Convicted for having deserted the ship after eight days' service only, having previously received 3*l.* 10*s.* each for a month's wages in advance.	ditto -	ditto -	
	1874	Nil - - -	-	—	—		—	—	—	—	—
MIDDLESEX:											
Coldbath Fields County Prison.*	1873	Wells - - -	1	J. Paget, esq., Thames Police Court.	31 Jan.	1873	3 weeks - -	Deserted off Woolwich, absconding with 14*s.* which had been advanced to him.	Not stated	Not stated	
		Helen Campbell -	4	Ditto - - - - -	6 Feb.	„	12 weeks - -	Deserted and entered on another ship; admitted they were deserters, and said they were enticed away by liquor.	ditto -	ditto -	
		Hallow Even -	1	F. Lushington, esq., Thames Police Court.	19 Mar.	„	12 weeks - -	Deserted in Sydney - - -	ditto -	ditto -	
		Marietta - -	1	J. Paget, esq., Thames Police Court.	19 April	„	10 weeks - -	Got his advance note cashed, and then signed articles and sailed in another ship.	ditto -	ditto -	
		Hero of the Nile -	1	F. Lushington, esq., Thames Police Court.	10 May	„	8 weeks - -	Signed articles in two ships, and did not sail in either.	ditto -	ditto -	
		Margam - -	1	G. Chance, esq., Thames Police Court.	28 Aug.	„	3 weeks - -	Said he would go when he liked; promised to join at Gravesend, but failed to do so.	ditto -	ditto -	
		R. H. Hunton -	1	Ditto - - - - -	3 Sept.	„	8 weeks - -	Promised to go; no reason alleged for not doing so.	ditto -	ditto -	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Ann Duthie - -	1	F. Lushington, esq., Thames Police Court.	5 Nov.	„	14 days - - -	Got his advance note; was promised higher wages in another ship by his boarding master.	ditto -	ditto -	
	1874	Medora - -	1	J. Paget, esq., Thames Police Court.	7 Feb.	1874	8 weeks - -	Said he hoped the captain would look over it; he'd go back.	ditto -	ditto -	
		Enoch Train -	1	Ditto - - - - -	13 Feb.	„	10 weeks - -	Signed in another ship after getting his advance note cashed.	ditto -	ditto -	
		Abigail - -	1	F. Lushington, esq., Thames Police Court.	18 Feb.	„	8 weeks - -	Said he was not well - - -	ditto -	ditto -	
		Alley - - -	1	Ditto - - - - -	24 Mar.	„	1 calendar month -	Said it was through drink; he was too late to catch her.	ditto -	ditto -	
		Dunkeld - -	1	J. Paget, esq., Thames Police Court.	10 July	„	6 weeks - -	Deserted at Adelaide - - -	ditto -	ditto -	
		Guiding Star -	1	Ditto - - - - -	18 July	„	4 weeks - -	Said he would not go, as the mate pulled him back when he wanted to have a drink with his boarding master.	ditto -	ditto -	
		Holland - -	1	Ditto - - - - -	31 Oct.	„	4 weeks - -	No reason assigned - - -	ditto -	ditto -	
		Tonning - -	3	F. Lushington, esq., Thames Police Court.	2 Nov.	„	10 days - - -	No reason alleged - - -	ditto -	ditto -	
		Harriet Wardell -	1	Ditto - - - - -	3 Nov.	„	1 calendar month -	Prisoner said, "I suppose I shall have to stand it through, but it was not my fault."	ditto -	ditto -	

* One of the Magistrates of the Thames Police Court states that in no case has there been any complaint of the unseaworthiness of the ship, nor has any survey ever been ordered from his Court. The cases which come here under the Merchant Shipping Act are generally those where the sailor has either got drunk and neglected to join, or got his advance note cashed and then cheated the person who has cashed it, or has signed in two ships and got his note from both.

RETURN of the Crews of Merchant Ships which have been Committed to Prison in the Years 1873 and 1874, for Refusing proceed to Sea, &c.—*continued.*

COUNTY AND NAME OF PRISON.	Year.	NAME OF SHIP.	Number of Men Committed to Prison.	By whom Committed, giving Name of Petty Sessions.	Date of Conviction.	Term of Imprisonment.	Reasons alleged by Seamen for Refusing to proceed to Sea.	Wages Advanced. Amount received in Advance Notes.	Wages Advanced. Amount received in Cash.	Whether Committing Magistrate ordered Survey by a Board of Trade Surveyor.
								£. s. d.	£. s. d.	
MIDDLESEX—*continued.*										
City and Debtors' Prison, Holloway.	1873	Uruguay	1	Lord Mayor, Mansion House Justice Room.	4 Jan. 1873	3 weeks	The seaman stated that the captain had given him till six o'clock to join the ship, and the ship sailed at five.	Not stated	Not stated	No application for survey by a Board of Trade surveyor was made.
		Mary Ann	1	Ditto	6 Feb. „	2 weeks	Refused because the ship was too old.	ditto	ditto	
	1874	Nil	—	—	—	—	—	—	—	—
NORFOLK:										
Norfolk County Prison, Swaffham.	1873	Unity	1	J. O. Smeetham, J. D. Thew, and George Holditch, esqrs., Lynn.	26 June 1873	1 month	No reason assigned	Not stated	Not stated	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Catharine	1	Ditto	6 Aug. „	4 weeks	ditto	ditto	ditto	
		Veritas	1	Ditto	6 Aug. „	8 weeks	A misunderstanding between the master and seaman as to date of sailing of the vessel, and that there was no victuals on board.	ditto	ditto	
	1874	Nil	—	—	—	—	—	—	—	
Great Yarmouth Borough Prison.	1873	Dorothea	5	Borough Justices	22 Jan. 1873	6 weeks	None	Not stated	Not stated	
		Kildare	3	Ditto	25 Oct. „	Two for 6 weeks, and one for 14 days.	That the second mate grumbled as to the quality of the provisions.	4 *l.* 10 *s.*; and 2 *l.* 10 *s.*	3 *l.* 10 *s.*;	
		Thomas Etherden	1	Ditto	28 Nov. „	1 month	None	Not stated	Not stated	
	1874	Emerald	1	Ditto	25 Sept. 1874	10 weeks	That the ship was unseaworthy, and making too much water.	3 15 –	ditto	
NORTHUMBERLAND:										
Northumberland County Prison, Morpeth.	1873	Charles Tennant	2	Joseph Spence and Joseph Green, esqrs., North Shields.	31 Oct. 1873	4 weeks	Prisoners alleged they were overworked and ill-fed, which was denied, and unproved.	Not stated	Not stated	No application for survey by a Board of Trade surveyor was made.
	1874	Nil	—	—	—	—	—	—	—	
SOMERSETSHIRE:										
Somerset County Prison, Taunton.	1873	Hannah	2	J. R. Smith, esq., Mayor, and Robert Salmon, esq., Bridgewater.	29 Dec. 1873	7 days' hard labour	Stated in commitment, "Did refuse without reasonable cause."	Not stated	Not stated	No application for survey by a Board of Trade surveyor was made.
	1874	Nil	—	—	—	—	—	—	—	—
SOUTHAMPTON:										
Hants County Prison, Winchester.	1873	Princess Beatrice	1	Captain Field, R. N., and Colonel Mansel, Gosport.	17 Jan. 1873	14 days	Would do no more work in ship	Not stated	Not stated	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Ardencraig	8	Captain Purvis, R. N., and G. Long, esq., Gosport.	22 Jan. „	21 days each	Ship making too much water	ditto	ditto	
		Lizzie Bovill	1	Colonel Mansel and G. Long, esq., Gosport.	5 Mar. „	21 days	Short-handed	ditto	ditto	
		Island Maid	1	Captain Purvis, R. N., and Colonel	18 Mar. „	21 days	Not stated	ditto	ditto	

		Killarney - -	8	Captain Purvis, R.N., and B. W. Carter, esqrs., Gosport.	9 May „	Two prisoners, six weeks; and six, 12 weeks.	Insufficiency of meat - - -	ditto -	ditto -	
		Seawfell - -	2	Captain Field, R.N. and G. Long, esqrs., Gosport.	16 Dec. „	One, four weeks; and one, five weeks.	State of ship and insufficiency of food.	ditto -	ditto -	
	1874	Hugh Ewing -	3	Chas. Brett, esq., Ryde - -	26 Jan. 1874	4 weeks each -	Ship too deep; provisions not as represented; ship leaked and unseaworthy, and they were afraid to go in her.	ditto -	ditto -	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Singalese - -	1	Captain Purvis, R.N., and H. D. P. Cunningham, esq., Gosport.	2 Sept. „	12 weeks - -	- ditto - - ditto - - -	ditto -	ditto -	
		Olivia - - -	2	W. H. Stone, esq., and Captain Hodgkinson, R.N., Havant.	17 Oct. „	7 days each - -	Ship sailed on a Friday and they would not go till Monday.	ditto -	ditto -	
Portsmouth Borough Prison.	1873	Nil - - -	—	—	—	—	—	—	—	—
	1874	Georgia - -	7	G. Curtis and A. Nance, esqrs., Justices of the Peace, Portsmouth.	8 Dec. 1874	4 weeks - -	Forecastle not in a fit condition, and that captain refused to allow men to go on shore the previous night.	Not stated	Not stated	No application for survey by a Board of Trade surveyor was made.
YORKSHIRE:										
York (North Riding) County Prison, Northallerton.	1873	Vivid - - -	1	R. Dixon, esq., Middlesborough	13 Jan. 1873	1 calendar month -	Drunkenness - - - -	Not stated	Not stated	
		Chevvington -	1	T. Brentnall, esq., Middlesborough.	29 May „	14 days - - -	Quarrel with mate - - -	ditto -	ditto -	
		Veracity - -	1	R. Stephenson, esq., Mayor, and T. Brentnall, esq., Middlesborough.	7 Aug. „	1 calendar month -	"Never been to sea before, and don't like the sea."	ditto -	ditto -	
		Friends - -	1	J. Berdham, esq., Whitby -	9 Dec. „	1 calendar month -	Defendant, who pleaded guilty, said he would go in any ship but her; it was proved that he had been 3½ years in the ship and had never complained.	ditto -	ditto -	
	1874	Othello - -	1	E. Turton, esq., Whitby - -	22 Aug. 1874	56 days - - -	Defendant had no excuse; the ship was a good one, and was going a pleasant voyage. He pleaded guilty.	ditto -	ditto -	
Scarborough Borough Prison.	1873	Vivid, Temperance Star, and General Lee.	3	J. Haigh and R. Champley, esqrs., Scarborough.	23 Sept. 1873	14 days each - -	Reasons alleged generally, having made second engagements at a higher rate of wages.	ditto -	ditto -	No application for survey by a Board of Trade surveyor was made in any of these cases.
		Gallilee - -	1	H. Fowler and W. Holden, esqrs., Scarborough.	24 Sept. „	4 weeks - -	- ditto - - ditto - - -	ditto -	ditto -	
		Scarborough King	1	H. Fowler and R. Champley, esqrs., Scarborough.	2 Oct. „	6 weeks - -	- ditto - - ditto - - -	ditto -	ditto -	
		Gallilee - -	1	J. Williamson, esq., Mayor, and J. Haigh, esq., Scarborough.	7 Oct. „	2 weeks - -	- ditto - - ditto - - -	ditto -	ditto -	
		William and John	2	H. Fowler and R. Champley, esqrs., Scarborough.	6 Nov. „	2 weeks each -	- ditto - - ditto - - -	ditto -	ditto -	
		Name not given -	1	G. White, esq., Mayor, and J. Leckenby, esq., Scarborough.	31 Dec. „	4 weeks - -	- ditto - - ditto - - -	ditto -	ditto -	
	1874	Dazzler - -	1	G. White, esq., Mayor, and H. Smith, esq., Scarborough.	5 Feb. 1874	21 days - - -	- ditto - - ditto - - -	ditto -	ditto -	
		Commodore and Thomas and Ann.	2	R. Champley and J. Leckenby, esqrs., Scarborough.	14 Feb. „	6 weeks and four weeks respectively.	- ditto - - ditto - - -	ditto -	ditto -	
		Yorkshire Lass -	1	Captain Laye, R.N., and R. Champley, esq.	18 Aug. „	2 weeks - -	- ditto - - ditto - - -	ditto -	ditto -	
		Volunteer - -	1	G. White, esq., Mayor, and W. Rowntree, esq.	18 Sept. „	4 weeks - -	- ditto - - ditto - - -	ditto -	ditto -	

RETURN of the Crews of Merchant Ships which have been Committed to Prison in the Years 1873 and 1874, for Refusing to proceed to Sea, &c.—*continued.*

COUNTY AND NAME OF PRISON.	Year.	NAME OF SHIP.	Number of Men Committed to Prison.	By whom Committed, giving Name of Petty Sessions.	Date of Conviction.	Term of Imprisonment.	Reasons alleged by Seamen for Refusing to proceed to Sea.	Wages Advanced. Amount received in Advance Notes.	Wages Advanced. Amount received in Cash.	Whether Committing Magistrate ordered Survey by a Board of Trade Surveyor.
WALES.								£. s. d.	£. s. d.	
ANGLESEY:										
Anglesey County Prison, Beaumaris.	1873	Gilbert Wheaton	2	Admiral Schomberg and William Walthew, esq., Holyhead.	27 Jan. 1873	One for 7 days, and one for 10 days.	Ship leaky	Not stated	Not stated	
	1874	Nil	—	—	—	—	—	—	—	
CARMARTHENSHIRE:										
Carmarthen County Prison	1873	Glattice	1	D. A. Onslow and J. B. Elkington, esqrs., Llanelly.	23 April 1873	7 days	Got drunk	Not stated	Not stated	
	1874	The Saint	2	Rd. Nevill and W. H. Nevill, esqrs., Llanelly.	7 Feb. 1874	21 days each	ditto	ditto	ditto	
CARNARVONSHIRE:										
Carnarvon County Prison	1873	Ann	1	W. W. Roberts, esq., Borough Sessions, Carnarvon.	12 Nov. 1873	4 weeks' hard labour	Drunk	1 12 6	Not stated	
	1874	Anne Jane	1	James Rees, esq., Borough Sessions.	3 June 1874	7 days' hard labour	None	Not stated	ditto	
GLAMORGANSHIRE:										
Glamorgan County Prison, Cardiff.	1873	Gem	1	R. O. Jones, esq., Cardiff	21 Feb. 1873	10 weeks	That ship was dirty	ditto	ditto	No application for survey by a Board of Trade Surveyor was made in any of these cases.
		Ellen	1	Ditto	24 Mar. ,,	6 weeks	That he wanted more drink	ditto	ditto	
		Dalkeith	1	Ditto	24 Mar. ,,	6 weeks	None	ditto	ditto	
		Star of the West	1	H. Bowen, esq., Cardiff	31 May ,,	8 weeks	That he had not been to sea before	ditto	ditto	
		George H. Warren	1	Ditto	15 Sept. ,,	6 weeks	Drink	ditto	ditto	
		Navis	1	J. Pride, esq., Cardiff	21 Nov. ,,	10 weeks	None	ditto	ditto	
		Becton	1	W. Vachell, esq., Cardiff	26 Nov. ,,	4 weeks	Illness	ditto	ditto	
		Xanthus	1	Ditto	12 Dec. ,,	6 weeks	Ship dirty	ditto	ditto	
		Matra Buleshwar	1	George Bird, esq., Cardiff	20 Dec. ,,	8 weeks	None	ditto	ditto	
		John Middleton	1	W. Vachell, esq., Cardiff	29 Dec. ,,	1 month	Drop too much	ditto	ditto	
		Wimbledon	12	H. Bowen, esq., Cardiff	9 Jan. ,,	10 weeks	Bad beef	ditto	ditto	
		Wimborne	1	R. O. Jones, esq., Cardiff	23 April ,,	6 weeks	That he had no clothes	ditto	ditto	
	1874	Margaret Smith	1	William Alexander, esq., Cardiff	5 Jan. 1874	8 weeks	Complained of hawse pipes in forecastle.	ditto	ditto	
		Sauvegarde	1	R. O. Jones, esq., Cardiff	28 Jan. ,,	8 weeks	Would not go till he had more drink.	ditto	ditto	
		Ellen Sutton	1	Ditto	18 Feb. ,,	2 weeks	That he could not get his clothes	ditto	ditto	
		Venitia	1	Ditto	20 Feb. ,,	2 weeks	Was in bad spirits and took drink	ditto	ditto	
		William Banks	1	Ditto	20 Feb. ,,	10 weeks	That he had no clothes or bed	ditto	ditto	
		Star of Brunswick	1	W. Done Bushell, esq., Cardiff	9 Mar. ,,	1 month	Drink	ditto	ditto	
		Thomas	4	R. O. Jones, esq., Cardiff	18 Mar. ,,	12 weeks	Cannot please the captain	ditto	ditto	
		Knugeton Hall	3	J. Pride, esq., Cardiff	6 April ,,	8 weeks	That he was told the ship was not going to sail.	ditto	ditto	
		Curlew	3	R. O. Jones, esq., Cardiff	10 April ,,	8 weeks	That there were coloured men on board.	ditto	ditto	

		Ditto - -	1	Ditto - - - - -	10 April	„	10 weeks - -	Illness - - - - -	ditto -	ditto -			
		Tonkin - -	1	Ditto - - - - -	13 April	„	8 weeks - -	Drink - - - - -	ditto -	ditto -			
		Florence Danvers	2	Ditto - - - - -	11 April	„	8 weeks - -	That they went for a walk - -	ditto -	ditto -			
		Tonkin - -	1	Ditto - - - - -	13 April	„	8 weeks - -	Drink - - - - - -	ditto -	ditto -			
		Florence Danvers	1	Ditto - - - - -	17 April	„	10 weeks - -	That boarding house keeper would not let him have his tools.	ditto -	ditto -			
		Newbegan - -	1	Ditto - - - - -	5 June	„	6 weeks - -	That he went to ship and found a man in his room.	ditto -	ditto -			
		Westfield - -	1	J. Pride, esq., Cardiff - -	3 July	„	8 weeks - -	Had no clothes - - - -	ditto -	ditto -			
		Africano - -	10	R. O. Jones, esq., Cardiff - -	2 Sept	„	10 weeks - -	Bad provisions (surveyed by Custom House officer: reported good); prisoners then said, if provisions were good, they would not go; too many foreigners.	ditto -	ditto -			
		Matchless - -	1	Ditto - - - - -	9 Sept.	„	10 weeks - -	That the galley smoked - -	ditto -	ditto -			
		Emma F. Secar -	4	Ditto - - - - -	5 Oct.	„	10 weeks - -	Ship undermanned - - -	ditto -	ditto -			
		Ditto - -	1	Ditto - - - - -	5 Oct.	„	10 weeks - -	Charged with neglect only, not refusing.	ditto -	ditto -			
		Kate Covert -	1	Ditto - - - - -	9 Oct.	„	10 weeks - -	That there were foreigners on board	ditto -	ditto -			
Glamorgan County Prison, Swansea.	1873	Viola - - -	4	J. T. Jenkin and N. P. Cameron, esqrs., Swansea.	4 Jan.	1873	4 weeks - -	That ship was leaky, and bunks wet, and would not go further unless caulked.	ditto -	ditto -			
		Jessie Jamieson -	1	S. Thomas Fisher and J. T. Jenkin, esqrs., Swansea.	22 Jan.	„	6 weeks - -	Charged with refusing to obey captain when at sea.	ditto -	ditto -			
		Daniel Runkin -	1	R. O. Jones, esq., Cardiff - -	22 Jan.	„	6 weeks - -	- - - - - - - -	ditto -	ditto -			
		Eddystone - -	3	Ditto - - - - -	24 Jan.	„	10 weeks - -	Proper complement not on board -	ditto -	ditto -			
		Amacree - -	1	Ditto - - - - -	24 Jan.	„	10 weeks - -	Ship not seaworthy - - -	ditto -	ditto -	No application for survey by a Board of Trade Surveyor was made in any of these cases.		
		Wimbleton - -	5	Ditto - - - - -	24 Jan.	„	10 weeks - -	Ship unseaworthy - - -	ditto -	ditto -			
		Ditto - -	3	H. Bowen, esq., Cardiff - -	25 Jan.	„	10 weeks - -	- ditto - - - - -	ditto -	ditto -			
		Lebanon - -	1	R. O. Jones, esq., Cardiff - -	27 Jan.	„	10 weeks - -	Did not like the ship - - -	ditto -	ditto -			
		Chanory - -	3	Ditto - - - - -	27 Jan.	„	6 weeks - -	No reason - - - - -	ditto -	ditto -			
		Admiral Blake -	1	T. D. Daniel and E. Jones, esqrs., Aberavon.	10 Feb.	„	3 weeks - -	- ditto - - - - -	ditto -	ditto -			
		Truro - - -	2	T. Ford and S. Padley, esqrs., Swansea.	13 Feb.	„	3 weeks - -	That forecastle was not fit to sleep in; no bunk or hammock.	ditto -	ditto -			
		Ann Adamson -	1	R. O. Jones, esq., Cardiff - -	17 Feb.	„	10 weeks - -	Did not like the ship - - -	ditto -	ditto -			
		St. Lawrence -	1	J. T. Jenkin and N. P. Cameron, esqrs., Swansea.	26 Feb.	„	4 weeks - -	No reason alleged; pleads guilty -	ditto -	ditto -			
		Osceola - -	2	Ditto - - - - -	16 April	„	4 weeks - -	- ditto - - - - -	ditto -	ditto -			
		Anna Frances -	4	R. O. Jones, esq., Cardiff - -	9 May	„	8 weeks - -	Ship unseaworthy - - -	ditto -	ditto -			
		Morning Star -	1	H. Bowen, esq., Cardiff - -	10 May	„	8 weeks - -	No reason - - - - -	ditto -	ditto -			
		Shepherdess -	1	Ditto - - - - -	10 May	„	8 weeks - -	- ditto - - - - -	ditto -	ditto -			
		Charlton - -	1	J. T. Jenkin and N. P. Cameron, esqrs., Swansea.	14 May	„	4 weeks - -	No reason alleged; pleads guilty -	ditto -	ditto -			
		William and Anne	1	Ditto - - - - -	14 May	„	4 weeks - -	- ditto - - - - -	ditto -	ditto -			
		Florence Nightingale.	2	H. Bowen, esq., Cardiff - -	14 May	„	6 weeks - -	One said he had a fit, another that he could not get his clothes down in time.	ditto -	ditto -			
		Beemah - -	14	R. O. Jones, esq., Cardiff - -	2 June	„	10 weeks - -	Ship not seaworthy - - -	ditto -	ditto -			
		George - -	1	C. T. Wilson and J. Oakshot, esqrs., Swansea.	3 June	„	4 weeks - -	No reason alleged; pleads guilty -	ditto -	ditto -			
		Delight - -	1	J. T. Jenkin and N. P. Cameron, esqrs., Swansea.	11 June	„	8 weeks - -	No reason alleged; shipped in another vessel.	ditto -	ditto -			
		Doctor - -	2	Ditto - - - - -	21 June	„	4 weeks - -	No reason alleged; pleads guilty -	ditto -	ditto -			
		First of May -	1	R. O. Jones, esq., Cardiff - -	23 June	„	4 weeks - -	Drunkenness - - - -	ditto -	ditto -			
		Annie Fisher -	1	J. C. Fowler, esq., Swansea -	24 June	„	4 weeks - -	No reason alleged - - -	ditto -	ditto -			

RETURN of the Crews of Merchant Ships which have been Committed to Prison in the Years 1873 and 1874, for Refusing to proceed to Sea, &c.—*continued.*

COUNTY AND NAME OF PRISON.	Year.	NAME OF SHIP.	Number of Men Committed to Prison.	By whom Committed, giving Name of Petty Sessions.	Date of Conviction.	Term of Imprisonment.	Reasons alleged by Seamen for Refusing to proceed to Sea.	Wages Advanced. Amount received in Advance Notes.	Wages Advanced. Amount received in Cash.	Whether Committing Magistrate ordered Survey by a Board of Trade Surveyor.
								£. s. d.	£. s. d.	
GLAMORGANSHIRE—*cont^d.*										
Glamorgan County Prison, Swansea—*continued.*	1873	Gipsy Queen	1	J. T. Jenkin and N. P. Cameron, esqrs., Swansea.	25 June 1873	4 weeks	No reason alleged	Not stated	Not stated	
		Redesdale	1	R. O. Jones, esq., Cardiff	27 June „	4 weeks	Drunkenness	ditto	ditto	
		Ocean Wave	2	J. C. Fowler, esq., Swansea	10 July „	6 weeks	No reason alleged; pleads guilty	ditto	ditto	
		Lizzie English	1	J. T. Jenkin and N. P. Cameron, esqrs., Swansea.	16 July „	4 weeks	- - ditto - - ditto	ditto	ditto	
		George Town	1	R. O. Jones, esq., Cardiff	28 July „	12 weeks	Did not like the ship	ditto	ditto	
		Oleanaya	1	J. T. Jenkin and N. P. Cameron, esqrs., Swansea.	2 Aug. „	2 weeks	No reason alleged	ditto	ditto	
		Eyricina	1	J. C. Fowler, esq., Swansea	10 Aug. „	1 week	- - ditto	ditto	ditto	
		Japan	1	Ditto	14 Aug. „	2 weeks	No reason alleged; pleads guilty	ditto	ditto	
		Maori	1	Ditto	26 Aug. „	8 weeks	Defendant said captain promised to let him go when arrived at Swansea.	ditto	ditto	
		Japan	3	Ditto	4 Sept. „	10 weeks	None	ditto	ditto	
		Osceola	1	J. T. Jenkin and T. Phillips, esqrs., Swansea.	16 Sept. „	4 weeks	ditto	ditto	ditto	
		Excel	1	C. T. Wilson, esq., Swansea	26 Sept. „	6 weeks	No reason alleged; pleads guilty	ditto	ditto	
		Pembroke Castle	1	J. C. Fowler, esq., Swansea	27 Nov. „	6 weeks	- - ditto - - ditto	ditto	ditto	
		Grace	1	Ditto	9 Dec. „	6 weeks	- - ditto - - ditto	ditto	ditto	
	1874	Gem	3	J. C. Fowler and J. C. Richardson, esqrs., Swansea.	22 Jan. 1874	6 weeks	No reason alleged; pleads guilty	ditto	ditto	No application for survey by a Board of Trade Surveyor was made in any of these cases.
		Gertrude	1	J. C. Fowler and T. Powell, esqrs., Swansea.	9 Feb. „	3 weeks	Absent without leave	ditto	ditto	
		Duke of Northumberland.	1	J. C. Fowler, esq., Swansea	5 Mar. „	4 weeks	None	ditto	ditto	
		Tiscoff	1	R. O. Jones, esq., Cardiff	23 Mar. „	4 weeks	No reason	ditto	ditto	
		Ensign	1	J. C. Fowler, esq., Swansea	2 April „	3 weeks	No reason alleged; pleads guilty	ditto	ditto	
		Countess	1	Ditto	10 April „	10 weeks	None	ditto	ditto	
		Columbo	1	Ditto	13 April „	8 weeks	No reason alleged; pleads guilty	ditto	ditto	
		Morning Star	1	Ditto	13 April „	2 weeks	None	ditto	ditto	
		Circassian	1	J. T. Jenkin and N. P. Cameron, esqrs., Swansea.	18 April „	4 weeks	Gave no reason	ditto	ditto	
		Uganda	1	W. T. Edwards, esq., Cardiff	29 April „	6 weeks	Drunkenness	ditto	ditto	
		Clara Louisa	1	W. Vachell, esq., Cardiff	1 May „	2 weeks	He was enticed away	ditto	ditto	
		Salas	1	J. T. Jenkin and N. P. Cameron, esqrs., Swansea.	2 May „	4 weeks	Too unwell at time to join ship; pleads guilty.	ditto	ditto	
		Henry S. Edwards	2	R. O. Jones, esq., Cardiff	6 May „	8 weeks	No reason; pleads guilty	ditto	ditto	
		Chieftain	1	Ditto	15 May „	2 weeks	No reason	ditto	ditto	
		Royal Visitor	1	Ditto	20 May „	10 weeks	Drunkenness; pleads guilty	ditto	ditto	
		City of Dublin	1	H. Bowen, esq., Cardiff	2 June „	4 weeks	Boarding master would not bring down my clothes.	ditto	ditto	
		Henrietta	1	T. Phillips and J. Oakshot, esqrs., Swansea.	30 June „	1 week	No reason alleged; pleads guilty	ditto	ditto	
		Blonde	1	J. T. Jenkin and S. Padley, esqrs., Swansea.	2 July „	6 weeks	None	ditto	ditto	

		Ethel	1	J. C. Fowler and T. Powell, esqrs., Swansea.	23 July „	8 weeks	No reason alleged; pleads guilty	ditto	ditto	
		Robert Ingham	1	R. O. Jones, esq., Cardiff	29 July „	8 weeks	He did not know that the ship was ready.	ditto	ditto	
		Royal Tar	1	Ditto	29 July „	8 weeks	Drunkenness; pleads guilty	ditto	ditto	
		Asterope	1	Ditto	31 July „	8 weeks	Had not sufficient clothes	ditto	ditto	
		Carnarvon Castle	2	Ditto	31 July „	4 weeks	No reason	ditto	ditto	
		Conway Castle	2	Ditto	5 Aug. „	One for 10 weeks, and one for 6 weeks.	Drunkenness	ditto	ditto	
		Pembroke Castle	1	J. C. Fowler, esq., Swansea	20 Aug. „	6 weeks	None	ditto	ditto	
		Africano	9	R. O. Jones, esq., Cardiff	2 Sept. „	10 weeks	Provisions bad, and too many foreigners.	ditto	ditto	
		J. B. Woods	1	J. C. Fowler, esq., Swansea	15 Sept. „	8 weeks	None	ditto	ditto	
		Delaware	1	R. Richards and J. T. Jenkin, esqrs., Swansea.	17 Sept. „	6 weeks	No reason alleged; pleads guilty	ditto	ditto	
		G. C. Gradwell	1	Ditto	17 Sept. „	6 weeks	- - ditto - - ditto	ditto	ditto	
		Dorothea	1	T. Ford and J. T. Jenkin, esqrs., Swansea.	24 Sept. „	4 weeks	Alleged that all his clothes were not on board.	ditto	ditto	
		Ditto	1	T. Ford and G. B. Brock, esqrs., Swansea.	28 Sept. „	6 weeks	No reason alleged; pleads guilty	ditto	ditto	
		Florence	1	J. C. Fowler, esq., Swansea	13 Oct. „	8 weeks	- - ditto - - ditto	ditto	ditto	
		Cobden	1	J. T. Jenkin and L. D. Williams, esqrs., Swansea.	14 Oct. „	6 weeks	No reason given; pleads guilty	ditto	ditto	
		Northern Empire	1	H. Bowen, esq., Cardiff	19 Oct. „	10 weeks	That he was told that the ship had sailed.	ditto	ditto	
		Heptarchy	1	T. Powell and T. Ford, esqrs., Swansea.	23 Oct. „	6 weeks	No reason alleged; pleads guilty	ditto	ditto	
		Pride of England	3	R. O. Jones, esq., Cardiff	2 Nov. „	10 weeks	Two got drunk; one was ill	ditto	ditto	No application for survey by a Board of Trade Surveyor was made in any of these cases.
		Savoir Faire	1	Ditto	11 Nov. „	6 weeks	Too late when he woke up	ditto	ditto	
		Bywell Castle	1	Ditto	11 Nov. „	6 weeks	Did not know when she was going out.	ditto	ditto	
		City of Lucknow	1	Ditto	27 Nov. „	6 weeks	Drunkenness	ditto	ditto	
		Samarang	1	Ditto	2 Dec. „	8 weeks	"All the crew were foreigners"	ditto	ditto	
		Brisbane	3	Ditto	2 Dec. „	One for 8 weeks, and two for 4 weeks.	"Did not get enough to eat"	ditto	ditto	
		Sarah and Emma	4	Ditto	2 Dec. „	Two for six weeks, and two for 4 weeks.	Drunkenness	ditto	ditto	
		Glamorgan	1	Ditto	2 Dec. „	2 weeks	No reason	ditto	ditto	
		Glee Maiden	3	Ditto	9 Dec. „	8 weeks	- ditto	ditto	ditto	
		Rossignol	2	Ditto	9 Dec. „	8 weeks	- ditto	ditto	ditto	
		Ditto	1	Ditto	11 Dec. „	8 weeks	- ditto	ditto	ditto	
		Banquereau	1	Ditto	11 Dec. „	10 weeks	Drunkenness	ditto	ditto	
		Sir Galahad	1	J. T. Jenkin and S. Horman Fisher, esqrs., Swansea.	16 Dec. „	4 weeks	No reason alleged; defendant admits leaving ship.	ditto	ditto	
		Nymph	1	T. Powell and J. T. Jenkin, esqrs., Swansea.	18 Dec. „	4 weeks	- - ditto - - ditto	ditto	ditto	
		Clachnacuddin	1	R. O. Jones, esq., Cardiff	21 Dec. „	6 weeks	Said that there would be a disturbance if he went.	ditto	ditto	
		Excellent	1	Daniel Jones, esq., Cardiff	30 Dec. „	8 weeks	Drunkenness	ditto	ditto	
		Americana	1	Ditto	30 Dec. „	8 weeks	No reason	ditto	ditto	
PEMBROKESHIRE:										
Pembroke County Prison, Haverfordwest Castle.	1873	Harvest Home	11	C. J. Wells and W. Rees, esqrs., Tenby Petty Sessions.	5 April 1873	4 weeks' hard labour	Ship unseaworthy	ditto	ditto	
	1874	W. H. Harkaway	1	W. Owen and J. Harvey Roose, esqrs., Haverfordwest Petty Sessions.	2 Sept. 1874	1 calendar month hard labour.	- - ditto	ditto	ditto	

SCOTLAND.

RETURN of the CREWS of MERCHANT SHIPS COMMITTED to PRISON in 1873 and 1874 for Refusing to proceed to Sea, showing the Number of Men, Name of Ship, and Term of Imprisonment, with Reasons alleged by Seamen for Refusing to go to Sea; and stating, also, in what Cases the Men are known to have received Wages in Advance, showing the Amount received, and whether in advanced Notes or in Cash; and stating, in each Case, whether the Committing Magistrate availed himself of the Power conferred upon him to order a Survey by one of the Surveyors of the Board of Trade.

COUNTY.	Port where Offence was Committed.	Court in which Conviction took Place.	Number of Crews of Merchant Ships Committed to Prison for Refusing to go to Sea in the Years		Number of Men Committed in each Case.	Name of Ship.	Term of Imprisonment in each Case.	Reasons alleged by the Seamen for Refusing to go to Sea.	Did Committing Magistrate avail himself of the Power conferred upon him, to order a Survey by one of the Surveyors of the Board of Trade.	If Men are known to have received Wages in Advance, state whether in advanced Notes or in Cash.	REMARKS.
			1873.	1874.							
BUTE	Rothesay	Justice of Peace Court	1		2	Harmony	12 weeks	Insufficient food			The complaints in the first two and the last cases were for "refusing to obey orders," and the third was for "desertion." There was no direct charge of refusing to proceed to sea.
	Ditto	ditto		1	2	Helen	12 weeks	Vessel not sufficiently manned.	No		
	Ditto	ditto		1	2	Bonito	4 weeks	Captain a drunkard, and ship overladen.	No		
	Ditto	ditto		1	6	Epaminondas	14 days	No reason			
FIFE	Tayport	Sheriff Court, Cupar	1		1	Luther	14 days	No reasonable excuse assigned, so far as known.	No	Not known.	
	St. Margaret's Hope.	Sheriff Court, Dunfermline.	1		2	Fanny	48 hours	Pleaded guilty to refusing to obey an order of the mate.	Considered unnecessary.		Tried for an offence within the meaning of the 243rd sect. of 17 & 18 Vict. c. 109.
LANARK	Glasgow	Justice of Peace Court	1		3		1 month				
			1		1	Sidonia	14 days				
			1		2		4 weeks				
			1		1	Trinidad	10 days				
			1		1	Ditto	10 days				
			1		1	Columbia	Admonished				
			1		1	Ditto	14 days				
			1		2	Pennsylvania	10 days				
			1		1	Victoria	4 weeks				

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RETURN of the Crews of Merchant Ships which have been Committed to Prison in the Years 1873 and 1874, for Refusing to proceed to Sea, &c.—*continued*.

COUNTY.	Port where Offence was Committed.	Court in which Conviction took Place.	Number of Crews of Merchant Ships Committed to Prison for refusing to go to Sea in the Years 1873.	Number of Crews of Merchant Ships Committed to Prison for refusing to go to Sea in the Years 1874.	Number of Men Committed in each Case.	Name of Ship.	Term of Imprisonment in each Case.	Reasons alleged by the Seamen for Refusing to go to Sea.	Did Committing Magistrate avail himself of the Power conferred upon him, to order a Survey by one of the Surveyors of the Board of Trade.	If Men are known to have received Wages in Advance, state whether in advanced Notes or in Cash.	REMARKS.
ORKNEY	Stromness	Sheriff Court, Kirkwall	-	1	2	John George	6 weeks, and wages forfeited.	Charged with desertion, but when in prison stated that they did so in consequence of the ship being old and not seaworthy.	-	Advanced notes	These two men deserted and could not be found until after ship had sailed. It is believed this vessel arrived at her destination, but was afterwards wrecked on Flamborough Head.
	Ditto	Justice of Peace Court, Stromness.	1	-	2	Arethusa	6 weeks, and 38 *s.* of expenses.	Crew insufficient in number, foot ropes, and running gear damaged, and old or worn out place to live in too small, but if damages repaired or replaced and accommodation provided, would not proceed.	No survey demanded, but inspection made by carpenter.	ditto	Ship arrived at her destination.
	Ditto	ditto	-	1	7	James Dale	ditto	Unseaworthy, and leaky and insufficient boats.	ditto	Six had received advance notes.	ditto.
ZETLAND	Lerwick	Sheriff Court	-	1	4	Villa Franca	34 days	Cargo had shifted in a gale, and the men were frightened.	No	Not known	The men were sentenced to 14 days each, for the offence specified in sub-division 4th of section 243 of the Merchant Shipping Act, 1854, and to 20 days each for the offences specified in sub-division 5th of said section of said statute.
RENFREW	Greenock	Justice of Peace Court, Greenock.	1	-	1	Cora	15 days				
			1	-	1	Imperial	10 days				
			1	-	2	Tornado	10 days				
			1	-	1	ditto	4 weeks				
			1	-	1	Meteor	40 days				
			1	-	1	Imperial	4 weeks				
			1	-	1	Tornado	30 days				
			1	-	7	Colmonell	10 weeks				

				1	- - 1	Thomassina M'Lellan.	4 weeks	-			
				1	- - 1	Veleda - -	10 weeks	-			
				-	1 1	Hibernia - -	3 weeks	-			
				-	1 1	Eveline - -	4 weeks	-			
				-	1 2	Marchioness of Londonderry.	6 weeks	-	No record is kept. In several the reason was because there were foreign sailors on board.	No, but in many cases in which the seamen alleged that anything was wrong with the vessels, the owners ordered surveys before the sailors were apprehended.	In almost every case they had received wages in advance, but no record was kept of these cases.
				-	1 1	Syringa - -	4 days	-			
				-	1 1	Argos - - -	8 weeks	-			
				-	1 12	Bruce - - -	10 weeks	-			
				-	1 1	Thorne - -	6 weeks	-			
				-	1 1	Helen Finlayson -	6 weeks	-			
				-	1 4	Rosedale - -	10 weeks	-			
				-	1 1	Helen Finlayson -	6 weeks	-			
				-	1 4	- ditto - -	10 weeks	-			
				-	1 6	Givenissa - -	8 weeks	-			
				-	1 2	No name - -	10 weeks	-			
				-	1 6	Hoogley - -	10 weeks	-			
				-	1 1	- ditto - -	10 weeks	-			
				-	1 1	St. Enoch - -	12 weeks	-			
				-	1 2	Ottawa - -	4 weeks	-			
				-	1 1	Asiatic - -	10 weeks	-			
D	ROSS - -	Stornoway -	Sheriff Court Stornoway	-	1 1	Eothen - -	4 weeks	-	Nil - - - -	No - - - -	Not known - -	On the motion of the owner warrant was granted to convey two of the crew on board to complete the voyage; the third person of the crew was sentenced to imprisonment for four weeks, as entered in this Return.
			TOTAL - - -	37	48 154						

ABSTRACT.

1873.	Number of Crews committed as above - - - - - - - - - - - - - - - - - -	37	
„	Men committed -	-	55
1874.	Number of Crews committed as above - - - - - - - - - - - - - - - - - -	48	
„	Men committed -	-	99
	TOTAL - - -		154

Note.—The above are the only committals which took place in Scotland during the period embraced in this Return.

No Return has been received from the Justice of Peace Clerk, Ayr.

Crown Office, Edinburgh, 19 January 1876.

Jas. Auldjo Jamieson, Crown Agent.

IRELAND.

RETURN of the CREWS of MERCHANT SHIPS COMMITTED to PRISON in 1873 and 1874 for Refusing to proceed to Sea, showing the Number of Men, Name of Ship, and Term of Imprisonment, with Reasons alleged by Seamen for Refusing to go to Sea; and, stating, also, in what Cases the Men are known to have received Wages in Advance, showing the Amount received, and whether in Advanced Notes or in Cash; and stating, in each Case, whether the Committing Magistrate availed himself of the Power conferred upon him to order a Survey by one of the Surveyors of the Board of Trade.

COUNTY AND NAME OF PRISON.	Year.	NAME OF SHIP.	Number of Men Committed to Prison.	By whom Committed, giving Name of Petty Sessions.	Date of Conviction.	Term of Imprisonment.	Reasons alleged by Seamen for Refusing to proceed to Sea.	Wages Advanced. Amount received in Advance Notes.	Wages Advanced. Amount received in Cash.	Whether Committing Magistrate ordered Survey by a Board of Trade Surveyor.
								£. s. d.	£. s. d.	
ANTRIM:										
Antrim County Prison -	1873	Storm Nymph -	1	J. C. O'Donnell, esq., R. M., Belfast Petty Sessions.	23 May 1873	7 days - - -	Drunkenness - - - - -	- -	- -	No.
		E. A. Bird - -	1	Edward Orme, esq., Belfast Petty Sessions.	28 May ,,	4 weeks - -	That after signing articles he got another berth at better wages.	- -	- -	No.
		John Richard -	2	J. C. O'Donnell, esq., R. M., Belfast Petty Sessions.	30 June ,,	4 weeks' hard labour each.	Not getting proper food; statement disproved.	One 1 15 - One 1 5 -	- -	No.
		Maria - - -	1	- ditto - ditto - -	7 July ,,	2 weeks - -	The prisoner said he belonged to Larne, and wanted to go there to see his wife, and also to get clothes.	1 15 -	- -	No.
		Bel Stewart - -	3	J. Borthwick and R. Alexander, esqrs., Carrickfergus Petty Sessions.	24 Dec. ,,	14 days each - -	Ship unseaworthy; forecastle unwholesome.	- -	- -	No.
		City of Glasgow -	6	J. C. O'Donnell, esq., R. M., Belfast Petty Sessions.	31 Dec. ,,	Five, 6 weeks' hard labour each; and one, 4 weeks' hard labour.	Five alleged that the accommodation for the men was not sufficient, and that the food was bad. The ship was surveyed before leaving the Clyde by the surveyor of the Board of Trade, and also by the officers of Emigration Commissioners. One alleged sickness as his excuse, medical evidence given that his illness was brought on by his own misconduct, but that there was no reason why he should not do the ordinary work of the ship.	3 10 - each.	- -	No.
	1874	Mary Anne - -	3	Robert Alexander, esq., Carrickfergus Petty Sessions.	20 Jan. 1874	Two, 8 weeks' hard labour each; and one, 12 weeks' hard labour.	No reason assigned; they refused to work.	- -	- -	No.
		Exile - - -	2	E. Orme, esq., Belfast Petty Sessions.	26 Jan. ,,	4 weeks each -	One said he had bad hands (not true); the other assigned no reason.	- -	- -	No.
		Erin - - -	4	T. Borthwick, esq., Carrickfergus Petty Sessions.	2 Mar. ,,	4 weeks each -	Pumps out of order; ship making much water.	- -	- -	No.

		Horatio - -	2	C. Duffin, esq., Belfast Petty Sessions.	18 April „	4 weeks each -	First refused unless another sailor to whom they objected was dismissed, subsequently they found fault with the forecastle; evidence given that the Board of Trade surveyors had made survey, and pronounced the ship all right; they recommended some alterations which were made.	A month's pay.	- -	No.
		Ditto - -	2	E. Orme, esq., Belfast Petty Sessions.	23 April „	10 weeks each -	First complained of one of the crew whose discharge they sought; next they complained of the forecastle, and demanded a survey, which was made by the Board of Trade surveyors. The report being unfavourable to the men they refused to proceed to sea because they were charged a small portion of the cost of survey.	ditto -	- -	No.
		Pleiades - -	1	- ditto - ditto - -	4 June „	8 weeks - -	Drunkenness - - - - -	- -	- -	No.
		Howard - -	1	J. C. O'Donnell, esq, Belfast Petty Sessions.	3 Aug. „	4 weeks - -	Could not assign any reason for leaving his ship, save that he got drunk.	- -	- -	No.
		Hornet - -	4	S. Orme, esq., R.M., Belfast Petty Sessions.	15 Aug. „	Remanded for 7 days	These four prisoners deserted their vessel at Belfast, and were remanded for a week until the ship was ready for sea, when they were sent on board.	- -	- -	No.
		Terentia - -	5	J. C. O'Donnell, esq., Belfast Petty Sessions.	2 Dec. „	12 weeks each -	The prisoners complained that the top gear and water-closets were insufficient, and that the victuals were badly cooked; these allegations were disproved.	Four 3 10 - each; One 4 10 -	- -	No.
E										
CORK:										
Cork County Prison - -	1873	Horsa - - -	9	J. W. Payne, esq., Castletown Petty Sessions.	31 Dec. 1872 sent to prison on 2 Jan. 1873	12 weeks each -	That deck-house, where the men slept, admitted water.	- -	- -	Not considered necessary.
		Trochragne - -	2	J. Beamish, esq., Queenstown Petty Sessions.	24 Jan. „	One, 10 weeks; and one, 8 weeks.	Considered voyage terminated on arrival of vessel at port of call.	3 - - each.	- -	Not ordered or demanded.
		Alessandro Danavara	1	Colonel Davis, Youghal Petty Sessions.	31 Jan. „	6 weeks - -	No reason alleged, but refused to join after signing articles.	- -	2 - -	No survey ordered, no complaint being made against ship.
		William and James	1	G. W. Creagh, esq., Youghal Petty Sessions.	7 Feb. „	2 weeks - -	Refusing to go to sea, and assigned no particular cause for deserting, but being indebted to the captain.	- -	- 8 6	- - ditto.
		British Constitution	1	J. Beamish, esq., Queenstown Petty Sessions.	16 April „	8 weeks - -	Fought with another of the crew, and on that account refused duty.	2 15 -	- -	Not ordered or demanded.
		James Edwards -	15	W. C. Gumbleton and J. Beamish, esqrs., Queenstown Petty Sessions.	21 April „	8 weeks each -	Having had to work at the pumps too long, and vessel not, in their opinion, fully manned.	3 - - each.	- -	- - ditto.
		Almora - -	4	T. P. Stamers, esq., Passage West Petty Sessions.	26 April „	Three for 2 days each for further examination, and one for 1 week.	Ship Almora, from London, with sand ballast, put into Passage about the 18th April 1873, leaky, with pumps choked; went into dock for repairs; while there the captain made an information against the said seamen for refusing to obey lawful commands, and perform their duty; all of whom, upon the hearing of said complaint, were willing to go aboard and proceed to sea, with the exception of John Stromberg, who refused to do so, and was sent to gaol for one week in default; it appeared he got a month's advance.	- -	- -	No.

RETURN of the Crews of Merchant Ships which have been Committed to Prison in the Years 1873 and 1874, for Refusing to proceed to Sea, &c.—*continued.*

COUNTY AND NAME OF PRISON.	Year.	NAME OF SHIP.	Number of Men Committed to Prison.	By whom Committed, giving Name of Petty Sessions.	Date of Conviction.	Term of Imprisonment.	Reasons alleged by Seamen for Refusing to proceed to Sea.	Wages Advanced. Amount received in Advance Notes.	Wages Advanced. Amount received in Cash.	Whether Committing Magistrate ordered Survey by a Board of Trade Surveyor.
CORK—*continued.*								£. s. d.	£. s. d.	
Cork County Prison—*contd.*	1873	Kathleen - -	9	J. Beamish, esq., Queenstown Petty Sessions.	21 May 1873	12 weeks each -	Considered vessel not properly manned, and unseaworthy; had to work at the pumps.	One 5 10 – Five 3 10 – One 2 15 – One 2 – –	One no note or money.	Survey by Board of Trade surveyor, and found seaworthy in every respect; survey demanded by crew.
		Earl of Elgin -	2	A. Bremner, esq., Queenstown Petty Sessions.	31 Oct. „	8 weeks each -	Disliked the officers, ship, and voyage.	3 10 – each.	- -	Survey not ordered or demanded.
	1874	Sarah Smith -	5	W. E. Gumbleton, esq., Queenstown Petty Sessions.	18 Feb. 1874	8 weeks each -	Disliked the voyage and vessel -	Two 4 10 – One 3 – – One 3 5 – One 2 5 –	- -	- - ditto.
		Madonna - -	1	J. P. Longfield, esq., Queenstown Petty Sessions.	27 Feb. „	8 weeks - -	Disliked the voyage - - -	- -	- -	- - ditto.
		Riverside - -	1	J. Leader, esq., Queenstown Petty Sessions.	11 Mar. „	8 weeks - -	Disliked remaining on the vessel to work while vessel undergoing repairs.	3 10 –	- -	- - ditto.
		Constance Wilson	2	J. N. Beamish, esq., Queenstown Petty Sessions.	2 April „	8 weeks - -	Fought with and beat another of the crew; refused to work in consequence of officers restoring order.	3 5 – each.	- -	- - ditto.
		Electric Flash -	5	A. Bremner, esq., Queenstown Petty Sessions.	17 April „	4 weeks each -	Refused to continue the voyage -	3 – –	- -	- - ditto.
		John Campbell -	1	W. D. Seymour, esq., Queenstown Petty Sessions.	9 Sept. „	8 weeks - -	Assigned no cause - - -	3 – –	- -	- - ditto.
		Ditto - -	1	W. E. Gumbleton, esq., Queenstown Petty Sessions.	14 Sept. „	8 weeks - -	- ditto - - - - -	3 – –	- -	- - ditto.
DUBLIN:										
Dublin County Prison, Kilmainham.	1873	Redbreast - -	3	W. Woodlock, esq., Kingstown Police Court.	3 Feb. 1873	14 days, or pay a fine of 40 *s.* each.	Alleged unseaworthiness of the ship, of which no evidence was given.	- -	- -	No.
	1874	Cuban - -	2	S. Dix, esq., Kingstown Police Court.	3 Feb. 1874	14 days' hard labour each.	The seamen were disobedient and refused to work, according to their engagement, for which refusal they assigned no reason.	- -	- -	No.
		Favourite - -	1	W. Woodlock, esq., Kingstown Police Court.	7 April „	6 weeks' hard labour	None - - - - - - -	- -	- -	No.
		Tancock - -	9	T. H. Barton, esq., Kingstown Police Court.	9 Oct. „	2 weeks' imprisonment each.	That they were unprovided with warm clothing, having (as they understood their agreement with the shipping agent at Liverpool) agreed to proceed to Galveston, Texas, and only supplied themselves with clothes suitable for such	- -	- -	No.

GALWAY:											
Galway County Prison -	1874	Nina - - -	2	B. Hill, esq., R.M., Galway Petty Sessions.	23 Feb. 1874	2 months' hard labour each.	Unseaworthy - - -	- -	- -	Survey by Mr. John Lynch, ship carpenter, an impartial surveyor, and having no interest in the ship, there not being time to send for Board of Trade surveyor, and ship being found seaworthy.
		Maria - - -	1	E. C. Burke, esq., Galway Petty Sessions.	24 Mar. ,,	2 months' hard labour.	Vessel unsound - - - - -	- -	1 15 -	Vessel examined by Captain Delary, of the Port of Galway, and considered quite sound.
		Siren - - -	1	B. Hill, esq., R.M., Galway Petty Sessions.	18 June ,,	1 month's hard labour	Desertion; no excuse given or entered in this case.	- -	- -	No survey ordered, it being a case of desertion and drunkenness.
KERRY:										
Kerry County Gaol, Tralee	1873	Unrestricted -	2	G. O'Connor, esq., Tralee Petty Sessions.	8 Jan. 1873	1 month's hard labour each.	No good reason assigned by seamen for their insubordination; but their neglect of duty was proved to the committing magistrate's satisfaction.	- -	- -	No survey ordered, as the vessel's state did not require it, she being safe after the gale, and uninjured.
		Grace Miller -	1	P. Donovan, esq., J.P., Tralee -	Examined and discharged, 11 Dec.	- - -	Seaman deserted without any cause, having previously signed articles; wind being fair, vessel sailed, and captain not appearing, the prisoner had to be discharged.	- -	3 - -	No.
WATERFORD:										
Waterford County Prison -	1874	Liberia - -	2	G. Goold, esq., Callahane Petty Sessions.	8 Jan. 1874	One for 10 weeks' hard labour, and one for 8 weeks' hard labour.	None special; on the 3rd he deserted, but on his promise to return to duty, remitted to vessel; on the 7th deserted again, and imprisoned.	- -	- -	No.
		Eugenie - -	5	G. Goold, esq., Police Court -	13 Feb. ,,	Three discharged at petty sessions, and two 2 months' hard labour each.	Ship proved herself too crank coming down the Channel from Liverpool on her outward voyage to the Coast of Africa, and dread of the mate.	- -	- -	Vessel surveyed, and reported fit for voyage.
		Lizzie - -	1	S. G. Freeman, esq., City Petty Sessions.	23 Mar. ,,	8 weeks' hard labour	No reason alleged - - -	- -	- -	No.
		Ganges - -	2	G. Goold, esq., City Petty Sessions.	- -	Discharged at petty sessions.	- - - - - - - -	- -	- -	No.
		Brothers - -	2	Wm. Commins, esq., City Petty Sessions.	27 July 1874	2 calendar months' each.	No reason that can now be discovered.	- -	- -	No.
		Cypress - -	1	G. Goold, esq., Callahane Petty Sessions.	7 Dec. ,,	10 weeks' hard labour	Unseaworthiness - - -	Advance given; amount not known.		Vessel surveyed at request of crew; reported fit.
		Brocklesby - -	5	Ditto - - ditto - -	16 Dec. ,,	Two for 12 weeks each, and three for 6 weeks each.	No reason alleged; they were brought up for continual disobedience of captain's orders, incited by foreign seamen.	- -	- -	No.
WEXFORD:										
Wexford County Prison -	1873	Industry - -	1	N. E. Huson, esq., J.P., Wexford Petty Sessions.	22 July 1873	3 weeks' hard labour	Made some excuse that was not considered satisfactory by the bench of magistrates; but made no complaint as to the vessel not being seaworthy.	- -	1 10 -	No.

MERCHANT SHIPS
(CREWS COMMITTED TO PRISON).

RETURN of the Crews of Merchant Ships Committed to Prison in 1873 and 1874 for Refusing to proceed to Sea, showing Number of Men, Name of Ship, and Term of Imprisonment, with Reasons alleged by Seamen for Refusing to go to Sea; and stating, also, in what Cases the Men are known to have received Wages in Advance, showing the Amount received, and whether in Advanced Notes or in Cash, &c.

(*Mr. Plimsoll.*)

Ordered, by The House of Commons, *to be Printed*
13 *August* 1875.

444.

Under 3 *oz.*

MERCHANT SHIPS (SURVEYS).

RETURN to an Order of the Honourable The House of Commons, dated 16 February 1875;—*for*,

COPY "of INSTRUCTIONS issued by the BOARD of TRADE to the SURVEYORS appointed by them, with reference to their DUTIES under the MERCHANT SHIPPING ACTS, 1854 to 1873."

Board of Trade,
11 August 1875.

T. H. FARRER.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed*,
11 *August* 1875.

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INSTRUCTIONS TO SURVEYORS OF SHIPS

APPOINTED BY

THE BOARD OF TRADE.

Preliminary.

Object of instructions.

These instructions relate to the duties to be performed by surveyors acting under the Merchant Shipping Acts and Passenger Acts. The surveyors will remember that it is not intended by these instructions to supersede a careful study on their part of the Acts referred to, nor to relieve them from the obligation of making themselves intimately acquainted with their provisions. It is also important that the surveyors should bear in mind that in all cases in which the Board of Trade rely upon their judgment, they are responsible to the Board of Trade for what they do. In all cases of doubt the surveyors should state the whole case, and apply to the Board of Trade for instructions, sending up sketches where necessary.

Surveyors duties are confidential.

Surveyors are to perform all their duties under the direction of the Board of Trade, and they will be distinctly and personally held responsible if they convey to any person or department, under any circumstances whatsoever (excepting only when directed to do so by one of the Secretaries or Assistant Secretaries of the Board), any information that may come into their possession in the performance of their official work. This does not of course refer to or in any way prohibit the communicating of information on the subject of the surveyors duties by the surveyors to the professional officer, the chief surveyor, the principal surveyors, or to other surveyors.

General Duties.

Duties of surveyors.

Surveyors appointed under Part IV. of the Merchant Shipping Act, 1854, are now intrusted with the following duties. Some surveyors perform all these duties; others, according to the terms of their appointment, only perform part of them.

Duties referred to.

(*a.*) The admeasurement of tonnage and inspection of marking of British ships for purposes of registry, and the admeasurement of tonnage of foreign ships for purposes of dues. (These are treated of in a separate book of instructions.)

(*b.*) The inspection of crew spaces.

(*c.*) The inspection of lights and fog signals.

(*d.*) The survey of passenger steamers under Part IV. of the Merchant Shipping Act, 1854.

(*e.*) The survey of emigrant ships under the Passengers Acts. (This is treated of in a separate book of instructions.)

(*f.*) The survey of distilling apparatus for the procuring of fresh water on board emigrant ships.

(*g.*) The survey of provisions, medicines, medical stores, ventilation, and accommodation on board emigrant ships. (These are treated of in a separate book of instructions.)

(*h.*) The survey of vessels alleged to be unseaworthy under the "Merchant Shipping Acts, 1871 and 1873." (These are treated of in a separate book of instructions.)

(*i.*) The examination of masters and mates in steam. (These are treated of in a separate book of instructions.)

(*j.*) The examination of engineers. (These are treated of in a separate book of instructions.)

Surveyors who hold appointments as engineers and shipwrights perform all duties connected with surveys.

Notice to be given to surveyors.

1. Each surveyor is to be careful that the owners of vessels requiring survey are informed that with a view to prevent inconvenience and delay, it is necessary that he should receive at least three clear days' notice when a survey is required, and that should such notice fail to be given, he (the surveyor) is not responsible for any irregularities or delay which may occur in consequence.

Application for survey how to be made.

2. All applications for surveys, inspections, or measurements must be made to Superintendents of Mercantile Marine Offices on Form "Survey 6."

The surveyors are not to survey or measure any ship unless the requisite application for survey on Form Survey 6 has been received by them, with Division C thereof duly filled up by a Superintendent of Mercantile Marine Office, and they should be careful to forward the form to the Board of Trade immediately after the application has been noted. An office copy of the Form Survey 6 should be retained in the office for the surveyor's guidance. The surveyor's office copy should, after the work is finished, be endorsed in red by the surveyor who does the work, with the dates of attendance and any other useful remarks.

Surveyors to send notice if unable to attend.

3. In order to prevent inconvenience and delay to the owners, the surveyors are to be careful to be on the spot at the time prescribed, so far as is consistent with the due performance of their duties, but should they be unable to attend as required, notice should be given to the owners to that effect.

Surveyors may go on board ships.

4. Surveyors may go on board any ship at any reasonable time for the purpose of inspection, either of the certificates of the master, mates, or engineers, or of the vessel, the machinery, the boats, other equipments, or for any other purpose rendered necessary by the Acts; and the owners, masters, mates, and engineers of steam ships are required by the Acts to give to the surveyors, on being requested so to do, all such information and assistance within their power as may be requisite for the purpose of making the returns required by the Acts. In the performance of this part of their duties, surveyors are to be careful to avoid impeding the duty of the vessel, or wilfully giving offence to any of the officers. If they should be hindered or vexatiously obstructed by any person in the performance of their duties they should by no means mark it by personal resentment, but should communicate the facts without delay to the Board of Trade, by whom the case will be taken up, if necessary.

Inspection to be made in the presence of owner, agent, or responsible person.

5. Surveyors and inspectors should make their inspections when the agent, master, or chief mate and engineer of the vessel is present if possible. Repairs can then be required, and defects can be pointed out to the proper persons without incurring the uncertainty and delay attendant upon messages delivered to the subordinate officers. If the owners do not regard the survey as being of sufficient importance to instruct a responsible representative to be present, the surveyors will of course make the survey without him.

Statement of repairs required to be given by surveyors.

6. In order to prevent any mistakes as to the nature and extent of repairs required by the surveyors whenever they cannot give a declaration until repairs are effected or alterations made, a written statement of the nature and extent of the defects to be remedied or alterations required, should in all cases be handed to the owner or agent, whether such a statement is applied for by him or not, a copy of which should always be taken in the office press letter book.

Survey of ship belonging to another surveyor's district.

7. If a vessel usually plying in one district is taken to another district to be surveyed, the surveyor in the latter district is not to give a declaration without first communicating with the surveyor for the former district, nor, if there is any difference of opinion, without referring the question to the Board of Trade for decision.

Alterations subsequent to survey to be noted and reported.

8. Surveyors are to take frequent opportunities of visiting all steam ships as they arrive from other ports, and should they find on inspection that any provision of the Acts is not complied with, or that any of the equipments have been damaged or taken away since the last survey, the fact should be pointed out to the master or officer in charge of the vessel, and a report forwarded to the Board of Trade at the same time by the surveyor. This is a very important part of the surveyor's duties.

It is a part of the surveyor's duty to report all cases of infringement of the Acts that come to their notice, and in reporting them, they should take care to state what the evidence is on which their report is founded.

Whenever it comes to the knowledge of a surveyor that any doubts have been raised by another surveyor, as to the efficiency of the hull, machinery, boilers, or equipments of a steam ship under survey, a declaration should not be granted until such defects or alterations have been made good, unless the surveyor who had any doubt upon the matter is satisfied that there is no necessity for repairs or alterations, as well as the surveyor who is making the survey. In these cases therefore the surveyor who is surveying the vessel should communicate with the surveyor who is of opinion that repairs or alterations were needed, and if they do not quite agree on the point raised, the matter should be at once submitted to the Board of Trade. Previous correspondence should be asked for before granting a declaration in the case of a vessel when on a previous occasion a declaration has been refused, or an incomplete declaration has been granted, or where the previous declaration has been granted conditionally on alterations or additions being made previous to a further survey.

9. Surveyors

9. Surveyors are in no case to give a declaration either for the hull, machinery, boilers, or equipments of a steamer unless they are satisfied that all the requirements of the Acts have been complied with. The Board of Trade will hold any surveyor responsible to the fullest extent for the performance of the duty entrusted to him, and will support him in any reasonable steps he may think necessary in order to the full performance of his duty. Declaration not be given without great caution.

10. In any case in which the surveyor has reason to believe that the hull, machinery, boilers, or equipments are not fit for so long a time as the owner has applied for, he is to grant his declaration for such shorter period as he may deem expedient, informing the owners, if necessary, of his reasons for so doing. But, unless it is the docking time only that limits his declaration, or the latest date for which an excursion certificate can be granted in accordance with the regulations, he is not to grant a declaration for a home trade, excursion, river, or smooth water steamer for a shorter period than one month, nor for a foreign-going steamer for less than a period of three months without the written authority of the Board of Trade. In such cases, and also in cases in which the surveyor refuses a declaration altogether, he is to give a statement in writing of the repairs he considers necessary to enable him to grant a declaration for the time asked. By this paragraph the surveyor is to understand that a foreign steam ship that is not fit for a declaration for three months is not to be deemed by him as fit to hold a certificate at all. The same rule is to apply to other steamers that are not fit for a month's certificate. In any special case the surveyor is of course to ask directions from the Board of Trade. Short declaration when to be granted.

11. The Act provides that the declarations are to be in such form as the Board of Trade directs, and the surveyors are to be very careful to fill in all the particulars for which spaces are provided, as, in the event of the declarations coming to the Board of Trade in an unfinished state, they will be returned to the surveyors for completion. Declaration to be in such form as Board of Trade directs.

12. Declarations when completed, so far as relates to the particulars to be furnished by the surveyors, are to be given or posted to the owner of the vessel or his agent, to be by him transmitted to the Board of Trade, which he is bound to do under a penalty of 10 *s.* per day for every day beyond the first 14 days after the date of its receipt. Declarations to whom to be sent or given.

13. Complete copies of the latest declaration issued must be kept in the office book provided for the purpose, and the surveyors are to keep an account of the persons to whom and the date on which their declarations are given or posted. Copies and records to be kept.

14. Every person who knowingly and wilfully makes, or assists in making, or procures to be made, a false or fraudulent declaration or certificate with respect to any vessel requiring such declaration or certificate under the Merchant Shipping Acts, or who forges, assists in forging, or procures to be forged, fraudulently alters, assists in fraudulently altering, or procures to be fraudulently altered, any declaration or certificate required by the Merchant Shipping Acts, or any words or figures in any such declaration or certificate, or any signature thereto, is guilty of a misdemeanor. Penalty for fraud in the matter of declaration.

15. All books, forms, and papers required for carrying the Acts into effect, will be supplied by the Board of Trade. Whenever a surveyor is in want of any books, forms, or papers, he will apply to the Superintendent of the Mercantile Marine Office at the port at which he is stationed, and such applications should be made in time to ensure a constant and adequate supply. Supply of books, &c.

16. Postage is not chargeable on letters sent (per General Post) to or from the Board of Trade. Postage.

17. All letters on subjects connected with the survey of vessels are to be addressed as follows, and should not be written on less than half a sheet of foolscap, one subject only being treated of in each letter. All letters should be headed with the subject written about. The words Surveys M. should be written on the outside in the bottom left-hand corner, and when for the Marine Department must be addressed as follows:— Address of letters.

O. H. M. S.

The Assistant Secretary,
Marine Department,
Board of Trade,
Whitehall, S.W.

Surveys M.

Letters addressed to any of the departments connected with the Board of Trade at the Mercantile Marine Offices, St. Katherine Dock House, Tower Hill, London, go free of charge, but the department for which they are intended, must be specified in the lower left-hand corner.

Passenger Certificates.

Passenger certificates.

18. These certificates will be sent in duplicate from the Board of Trade to the Mercantile Marine Office mentioned on the back of the declaration, and the master, owner, or agent will be duly advised of the transmission; they will be as follows:—

1. For foreign-going steamers, or those plying beyond the limits of the home trade - -	Form Survey 1. Sea-going.
2. For home trade passenger steamers, or those plying at sea within the limits of the home trade - - - - - - - - -	Form Survey 2. Sea-going.
3. For steamers plying along the coast during daylight, and within defined limits - - -	Form Survey 3. Excursion.
4. For steamers plying in waters which are partially smooth - - - - - - - - -	Form Survey 4. River.
5. For steamers plying in smooth water - - -	Form Survey 5. Rivers and Lakes.

Will be delivered by Superintendent to owners.

19. The Superintendent of the Mercantile Marine Office will deliver the certificate to the owner, agent, or master, upon his applying for the same at the Mercantile Marine Office, and paying the expenses, if any. If the certificate is not taken up within 14 days, the fact will be reported to the Board of Trade by the Superintendent.

Duplicate to be put up on board.

20. The Act requires that one of the duplicates of the certificate shall be put up in a conspicuous place, where it will be visible to all persons on board, under a penalty not exceeding 10 *l.*, and the surveyors are to inform the Board of Trade of any case of non-compliance with this enactment which may come to their knowledge.

Surveyor's Declarations.

Surveyor's declarations.

21. The particulars required to be given in the declaration for a passenger certificate are the following, which are treated of under separate heads:—

(1.) That the hull of the ship is sufficient for the service intended and in good condition.

(2.) That the boats, life buoys, lights, signals, compasses, and shelter for deck passengers, and the certificates of the master, and mate or mates, engineer or engineers, are such and in such condition as required by the Acts.

(3.) The time (if less than 12 months) for which the said hull and equipments will be sufficient.

(4.) The limits (if any) beyond which as regards the hull and equipments, the ship is, in the surveyor's judgment, not fit to ply.

(5.) The number of passengers which the ship is in the surveyor's judgment fit to carry, distinguishing, if necessary, between the respective numbers to be carried on deck, and in the cabins and in different parts of the deck and cabin, such numbers to be subject to such conditions and variations according to the time of the year, the nature of the voyage, the cargo carried, and other circumstances as the case requires.

The declaration of the surveyor as to the boilers and machinery is to contain a statement of the following particulars:—

(1.) That the machinery of the ship is sufficient for the service intended, and is in good condition.

(2.) The time (if less than 12 months) for which such machinery will be sufficient.

(3.) That the safety valves and fire hose are such and in such condition as are required by the Act.

(4.) The limits of the weight to be placed on the safety valves.

(5.) The limits (if any) beyond which as regards the machinery, the ship is, in the surveyor's judgment, not fit to ply.

The forms of declaration are of five kinds corresponding with the forms of certificates mentioned.

Form Survey 1 is to be given for foreign-going steamers, and Form Survey 2 is for home trade sea-going steamers. A statement of the limits of the intended voyages should be made therein, although it is not intended to confine the steamers to those limits.

Form Survey 3 is to be given for steamers plying along the coast during daylight between any of the places mentioned in the first column of the table of limits, and the places

places set opposite to them in the fourth column of the same table. In this form the proper limits named in the table are to be inserted, and owners will be liable to the penalties named in the Act if the steamers are allowed to ply beyond the limits stated on the certificates.

Form Survey 4 is to be given in the case of steamers plying between any of the places mentioned in column 1 of the table and the places set opposite to them in column 3, and Form Survey 5 is to be given when the steamer is plying in the smooth water limits, lying between the places mentioned in the column 1 and the places set opposite to them in column 2. Surveyors must never grant declarations for special limits without the sanction of the Board of Trade.

When a surveyor is, from any reason whatever, unable to complete his declaration, an incomplete declaration should be sent to the applicants who sent in Form Survey 6 as soon as possible, stating in it the reasons for not being able to fill up all the particulars under the various headings; of course he must take care to obliterate all the items in this declaration that he is unable to certify to as being in accordance with the Acts or the Board of Trade regulations.

Particulars of Registry.

22. Surveyors should insert in their declaration the particulars of the ship's registry, these they should take from the certificate of registry at every survey, and whenever these particulars differ from those stated in the last declaration granted for the ship, the reason of the difference should be ascertained and stated in the column for remarks in their declaration, as well as the date on which they examine the certificate of registry. Particulars of registry to be inserted in declarations.

Examination of Hulls.

23. Surveyors are to determine whether the hulls of passenger vessels are in good condition and fit for the service for which they are intended; and they are to examine the hulls of such vessels outside and inside once at least in every year, at such a time as is most convenient to the owner. Outsides to be examined.

24. Delays and inconveniences may to a great extent be prevented if notice is given by owners when a vessel, which requires a certificate, is undergoing repairs, or is in dry dock for any other purpose, as this notice might obviate the occasional necessity of redocking a vessel at an inconvenient time, and at great expense, for the surveyors to examine the outside of the hull; surveyors should explain this to owners or their agents whenever an opportunity occurs. Owner should give notice when a vessel is in dry dock.

25. The Board of Trade cannot regard as a satisfactory survey of a new steamship a survey made only after the hull is complete, and is cemented and painted. Surveyors are therefore instructed to decline to grant declarations for any new steamer, unless they inspected her before she was painted or cemented. This will entail some extra visits before the ship is finished, but as the surveyors now measure ships for tonnage, and have to go more frequently to ship-building yards than before, they will be well able to inspect before the paint and cement are put on. Any survey while building is not to interfere with the complete inspection afterwards, but is to be made solely with a view of enabling the surveyors to form an opinion of the workmanship, material, and construction. Survey of new ships to be made before painted or cemented.

In cases in which the surveyors decline declarations in consequence of not having inspected the vessel before the hull was painted and cemented, the owners or builders should be referred to the Board of Trade, in order that the Board may decide specially in each such case what steps should be taken.

Surveyors are sometimes called upon by owners to examine the bottoms of vessels during the night time. As such examinations cannot be considered satisfactory by the Board of Trade, the surveyors are instructed not to attempt to examine the bottoms of vessels except during daylight.

26. Surveyors should not refuse to grant a declaration for a vessel solely upon the ground that bulkheads are not fitted, that the ordinary bulkheads are not water-tight, or that the bulkheads fitted are otherwise defective, unless they are of opinion that the want of, or the defective state of, the bulkheads renders the ship unseaworthy, in which case they are fully justified in refusing to grant a declaration. They should, in all cases in which they refuse to grant a declaration for a vessel in consequence of defects relative to bulkheads, forward to the Board of Trade a full statement of their reasons for thinking that those defects render the hull of the vessel unseaworthy. Collision water-tight bulkheads, at least, must be fitted in all sea-going steamers. As to bulkheads.

The surveyors are also to see that an after water-tight compartment is fitted to cover the stern tube of the screw-shaft, both in old and in new vessels.

27. It is necessary that the screw tunnels of all iron passenger steam vessels should be made of iron, and should be strongly constructed and water-tight. If there are manholes or openings in the floor, care must be taken that all are efficiently fitted so that they can be easily made water-tight, and cocks or valves and pipes must be properly fitted to let the water off the floor of the tunnel. Such cocks or valves must be made to open or shut from the upper or main deck. A properly constructed water-tight door As to screw tunnels.

should be fitted at the forward end of the tunnel, arrangement being made that it can be easily opened or shut from the upper or main deck, and a stuffing-box round the shaft should be fitted at the forward end of the tunnel.

The surveyors should require this to be done in the case of all new vessels coming under their notice, in cases of old vessels which have not previously had passenger certificates, in cases of paddle-wheel vessels converted into screw vessels, and when new engines are put into a vessel.

When there is no tunnel whatever, and the vessel has been previously surveyed for, and received, a passenger certificate, a declaration may be granted for a period not exceeding six months on the owner undertaking to put the tunnel right before next survey. When the engines are right aft, and the owners object to a declaration for six months only being granted, a plan showing the arrangement of the screw shaft, &c., should be submitted for the consideration and directions of the Board of Trade.

Declarations may be granted for vessels requiring only Survey 4 and Survey 5 (partially smooth and smooth water) certificates for a period of 12 months without water-tight tunnels.

Examination of the bottom outside.

28. In no case should a surveyor grant a declaration for a steamer, the outside of the bottom of which has not been examined by a Board of Trade surveyor during the 12 months preceding the date of survey, and in no case should a declaration be granted for a longer period than a period terminating within 12 months from the date of the last outside examination. For instance, if a steamer be examined outside on the 1st of January, she will (if the law be complied with) be entitled to a certificate for 12 months (*i.e.*, until the 1st of January following). But supposing the survey is not completed until the 1st of February, the surveyor is (if the vessel be fit) to grant his declaration for a period ending the 1st of January following, and no longer unless the vessel be re-docked for examination. Surveyors should not depart from this in any case without the written directions of the Board of Trade.

To be made before paint is put on cocks, &c., to be examined in dry dock.

29. The surveyors, before granting a declaration for 12 months, should be careful to make a thorough examination of the outside of the bottom of the ship in a dry dock, after the paint has been scraped off, and before it is re-painted (but it should also be borne in mind that it is very desirable for the surveyors to see the vessel before the paint is scraped off, as well as after). They should carefully examine the pintles and gudgeons of the rudder, as well as the bearings of the screw shaft and the different openings, valves, bolt-heads, &c. in the ship's bottom. All bolts, connecting cocks, valves, or pipes to the skin of the ship should have the heads outside, and such heads should be what is technically known as either countersunk or cup-headed. All discharge valves and sea cocks should be taken out for examination; the roses for the deck pumps, as also those for the bilge pumps (or suction), should be taken out of the bilges and cleaned, and the sluices and cocks on the bulkheads inspected and put in good working order.

Before surveyors finally pass the hull of a vessel they are supposed to see it fit for going into the water.

Ceiling to be removed as surveyor thinks necessary.

30. For examining the internal parts of the ship, they should have parts of the ceiling removed in order that they may ascertain the condition of the ship; they should also carefully examine the cement to ascertain its condition, and where they find it cracked or doubtful, they should extend their examination, and cause such a portion of the cement to be removed as may, in their judgment, be necessary to enable them to form a correct opinion as to the state of the ship covered by the cement.

Bunkers to be empty.

31. The surveyors should make a point of examining the state of the ship (*i.e.*, plating, stringers, frames, floors, &c.), very particularly in the engine room and boiler space, and also in the coal bunkers, the bunkers, of course, being empty.

Entries in docking book.

32. The date of the last inspection is to be entered in the docking book, as it is from that date that the docking time is to count. If the hull is not passed at all, or not passed for the maximum time (12 months), the fact should be noted, both in the docking book, and also in the declaration for the vessel. Vessels' names that are entered in the docking book, with no notes to the contrary entered against them, will be supposed to have been passed for 12 months, and the surveyors who passed them will be held responsible for passing them for that time. Surveyors should also note in the docking book the repairs (if any) necessary, and also those done at each survey of the hull.

Sketches in docking book.

33. It is also advisable that approximate sketches of the midship sections of all vessels entered therein be made in the docking book, the position and dimensions of the fore and aft stringers especially being shown. Any questions of doubt as to the strengths of vessels should be referred to the Board of Trade.

As to coamings, skylights, scuppers, ports, gratings, &c.

34. The height of the coaming round all openings in the main deck, and the means provided for securely protecting or fastening down all skylights, bunker openings, &c., are important items to be noted by the surveyors in sea-going vessels coming under their survey, as well as the sufficiency of the water ports and scuppers for relieving the decks of water. All sidelights should be fitted with deadlights, and all stern and other ports in such a manner that they can be quickly and efficiently secured. All openings below the weather deck in sea-going steam and sailing vessels carrying passengers or emigrants, whether such weather deck be a poop, awning, spar deck, or forecastle, must be fitted with gratings or hatch covers and tarpaulins, and also with means for effectually securing the tarpaulins down, and making the openings water-tight. Such gratings or hatch covers must be kept and secured in a suitable place, at all times accessible and near to the openings for which they are intended.

Boats and Life-Buoys.

Statutory provisions as to boats, &c.

35. The following rules shall be observed with respect to boats and life-buoys (that is to say):—

(1.) No decked ship (except ships used solely as steam-tugs and ships engaged in the whale fishery) shall proceed to sea from any place in the United Kingdom unless she is provided according to her tonnage with boats duly supplied with all requisites for use, and not being fewer in number nor less in their cubic contents than the boats, the number and cubic contents of which are specified in the Table marked S. in the schedule hereto, for the class to which each ship belongs.

(2.) No ship carrying more than 10 passengers shall proceed to sea from any place in the United Kingdom unless, in addition to the boats hereinbefore required, she is also provided with a life-boat furnished with all requisites for use, or unless one of her boats heretofore required is rendered buoyant after the manner of a life-boat.

(3.) No such ship as last aforesaid shall proceed to sea unless she is also provided with two life buoys, and such boats and life-buoys shall be kept so as to be at all times fit and ready for use.

Provided that the enactments with respect to boats and life-buoys herein contained shall not apply in any case in which a certificate has been duly obtained under the 10th section of the Passengers Act, 1855.

In the case of any ship surveyed under the fourth part of the Merchant Shipping Act, 1854, the Board of Trade may, at the request of the owner, authorise the reduction of the number and the variation of the dimensions of the boats required for the ship by section 292 of that Act, and also the substitution of rafts or other appliances for saving life for any such boats, so, nevertheless, that the boats so reduced or varied and the rafts or other appliances so substituted be sufficient for the persons carried on board the ship. Section 293 of the said Act shall extend to any such rafts or appliances in the same manner as if they were boats.

The enactments contained in the Merchant Shipping Acts as to boats, and above referred to, do not apply in the cases of passenger steam vessels which have obtained a certificate under the provisions of the Passengers Act, 1855, but vessels coming under both Acts must have the maximum capacity required by the Acts.

If owner wishes to carry a reduced number, application to be made.

36. As regards boats and rafts, the surveyor will be guided by the scale for boats appended, which they will regard as the maximum quantity they can legally require, and in the event of owners wishing (1) to carry fewer or other boats, or (2) wishing to substitute rafts or other appliances for the boats required by law, the surveyor should, before giving a declaration, refer each case, with full particulars, for the consideration of the Board of Trade.

It will be the duty of the surveyor to take care that all steamships are provided with the boats or rafts required by the Acts, both as to number and cubic contents; and to be very particular in seeing that they are efficient and in good order and ready for service, subject to the rules contained in these instructions.

Surveyors are not to insist upon the precise lengths, breadths, and depths inserted in the Table, but are to approve of any efficient boats of sufficient strength, the cubic contents of which are respectively equal to or greater than the cubic contents of the boats specified in the Table.

If the smaller number of boats required by the Act is carried, one of them must be a launch of at least the capacity named in column 2 of the Table.

If the larger number of boats is carried, the cubic contents (equal in their aggregate to the cubic contents required by the Act) may be spread in any way over the whole number of boats. In addition to the above relaxation, the Board of Trade will, in any special case in which it is shown that steamers, from any peculiarity of construction or from other causes, are incapable of stowing the number of boats, &c. prescribed by the Acts, consider the propriety of making an exception to meet the case, upon a proper representation being made, accompanied by the report of their surveyor.

How to ascertain cubic contents.

37. To ascertain the cubic capacity of a boat accurately, Stirling's rule should be applied, similarly to the way it is applied in measuring ships for tonnage capacity; but as that would entail much labour, the Board of Trade have adopted the use of the factor 6. The surveyor is therefore to take the length and breadth outside and depth inside in feet (where the oars are pulled in rowlocks, the bottom of such rowlocks is to be considered as the gunwale of the boat for ascertaining her depth), and to multiply them into each other, then to multiply by ·6, and the product will be assumed to be the cubic capacity of the boat in feet. Thus a boat $28 \times 8{\cdot}5 \times 3{\cdot}5 \times {\cdot}6 = 499{\cdot}8$ cubic feet. This boat will therefore be assumed to be of 500 cubic feet capacity.

As to life-boats.

38. A square sterned boat is not to be passed as a life-boat.

Excepting in small boats the oars should be double banked.

A life-boat fitted with efficient and substantial air casings is deemed to be capable of carrying one adult for every 10 cubic feet of her capacity. Thus, a life-boat measuring $28 \times 8{\cdot}5 \times 3{\cdot}5$, whose cubic contents by the present rule are 500 feet, is deemed to be sufficient

sufficient for 50 adult persons. The space in the boat must be sufficient for the seating of the persons carried in it and for the proper use of the oars.

No boat should be passed as a life-boat unless she has for every person she carries, or, what is the same thing, for every 10 cubic feet computed as above, at least one-and-a-half of cubic feet of strong and serviceable inclosed air-tight compartments, so constructed, fitted, and arranged that water cannot find its way into them. That is to say, the life-boat measuring 28 × 8·5 × 3·5, whose whole cubic contents are deemed to be 500 feet, and which is deemed to be sufficient for 50 adults, is to have 75 cubic feet (of her total 500 cubic feet) occupied by inclosed air cases, making 75 feet of closed-in buoyancy to 425 feet of clear space for passengers and crew.

Zinc is not permitted in the construction of a life-boat or her air casings.

These air-tight compartments must be so distributed as to give the boat good buoyancy and stability; whether a part of the air cases should be under thwarts or whether they should be all in the ends and along the sides, will be, so long as an efficient life-boat is obtained, left to the option of the owner. If air cases are in the bottom of the boat, the depth of the boat is to be measured from the top of the bottom air cases.

Spaces filled with or containing any material are not to be deemed to be air spaces.

No boat fitted with a steam engine is to be passed as a life-boat.

No life-boat, other than a metal one, should be passed if carried sufficiently near the funnel as to be injuriously affected by the heat therefrom

The Act provides that in the event of a life-boat not being provided in addition to the boats specified in Table S. for steamers under 1,000 tons register, one of the boats therein stated is to be a life-boat, and in all cases it should be one of the largest and most efficient boats at the davits.

Life-boats should be built whale-boat fashion, both ends alike. They should have a shear of about three quarters of an inch to a foot, rising equally from the midships to the stern and stem, and they should be made buoyant in accordance with the preceding instructions.

As to davits and lowering gear.

39. As regards requisites for use. All boats should be hung in davits and kept ready for service at any moment. The surveyors should see that in all boats the full complement of oars, including steering oar and two spare oars at least, are provided; in large boats more than two spare oars ought to be provided; that each boat has two plugs for each plughole, attached with lanyards or chains, and one set and a half of thole pins or crutches attached to the boat by sound lanyards; a bailer, a rudder and tiller, or yoke and yoke lines; a painter of sufficient length, and a boat-hook, the rudder and bailer to be attached to the boat by sufficiently long lanyards and kept ready for use. Means for speedily detaching the boats from the lower blocks of the davit tackles should be insisted upon; an ordinary fixed hook in the lower block shipping into a fixed eye in the boat should not be allowed. Surveyors should also see that the davits are strong enough, that they are so spaced that the boats can be swung out without unnecessary labour, that the boats' chocks can be expeditiously removed, and that the boats will not foul the ship's side in lowering when the ship has no list: and the whole of the tackling, including davits, falls, blocks, eye-bolts, and rings, &c., to be of sufficient strength to lower the boat, with its full complement on board, into the water. The boat's falls must be long enough to lower the boat into the water when the vessel is light. Life-lines should be fitted to the davits long enough to reach the water, when the vessel is light, and allowance made for the extreme roll of the ship.

Surveyors are to refuse declarations in cases in which the foregoing instructions are not fully carried out, but it is to be left to shipowners themselves to provide such methods as they please for lowering the boats, so long as the intention of the Legislature is complied with; any unusual or doubtful method of lowering boats must be submitted to the Board of Trade for their consideration and approval before they are passed.

All the boats should be seen lowered into the water at every survey.

Equipments of life-boats.

40. In the case of life-boats, the surveyor should see that the hatchet or tomahawk, which is to be kept in each end of each life-boat, is in good order, and attached with a lanyard, and that a mast or masts, with at least one good sail and proper gear for each, and a life-jacket or life-belt for each oarsman and one for the coxswain, is also provided; a life-line in loops should run round the outside of the boat and be securely made fast.

Life-jackets, standard of.

41. No life-jacket or belt should be passed that is not capable of floating in the water for 24 hours with 23 lbs. of iron suspended from it; and to insure this buoyancy a life-jacket, in which the cork must be exposed and have a canvas back and straps only, should weigh 5lbs. when dry.

Life-buoys, standard of.

42. As regards life-buoys. No life-buoy stuffed with rushes or with cork shavings or other shavings, or granulated cork, or any loose material, should be passed. All cork life-buoys should be built of solid cork and fitted with life-lines and loops, securely seized to the life-buoy, and none should be passed that will not float for 24 hours in water with 32 lbs. of iron suspended from them. If life-buoys are not made of solid cork, then any other strong life-buoy of an improved pattern may be passed that is capable of floating in the water for 24 hours with 40 lbs. of iron suspended from it. No contrivance is to be passed as a life-buoy that requires inflation before use. Life-buoys with lines attached should be secured by a toggle and becket, or any other similar method, so that they can be quickly released; they must not be lashed nor seized to the rail or any other part of the

the vessel, but must be kept so as to be ready for use at a moment's notice in case of an emergency.

What has been said respecting the position of boats is equally applicable to life-buoys, which should in all cases be carefully examined by the surveyor, in order to satisfy himself of their buoyancy, to see that the materials of which they are composed has not become sodden, and that the lines attached to them are sufficient. Surveyors are to call the attention of owners and masters to the penalties imposed under the 293rd section of the Act for not keeping the boats and efficient life-buoys in constant readiness.

Steam launches.

43. As regards steam launches or boats fitted with steam power, the contents taken up in the boat by the engine and boiler are not to be deemed part of the clear contents of the boat. As regards the safety valves fitted to the boilers of steam launches and of other boats carried by passenger steamers, the surveyors should see that the boilers are provided with safety valves out of the control of the engineer when steam is up, and subject to precisely the same rules as the safety valves on the main boilers. The lifting or easing gear for the valve should actually lift the valve and not merely the weight. The boilers should also have a steam-gauge, a glass water-gauge, and test cocks.

As to boats already passed.

44. In carrying these instructions into effect, surveyors are to be careful not to interfere unduly with lifeboats passed before April 1874, provided their buoyancy and efficiency are equal or nearly equal to that indicated above; but in the case of new boats coming under survey for the first time, as well as in all cases in which the fittings of the boats require renewal, the rules contained in these instructions are to be strictly adhered to, whilst the surveyors are to be careful not to interfere so as to condemn apparatus that may have been already passed, and that still remains efficient.

45. TABLE of the DIMENSIONS of BOATS required to be Carried by PASSENGER STEAMERS under the MERCHANT SHIPPING ACT.

Number of Tons' Register.	Either					Or				
	Number of Boats.	Dimensions. Length.	Breadth.	Depth.	Factor.	Cubic Contents.	Number of Boats.	Dimensions. Length.	Breadth.	Depth.	Factor.	Cubic Contents.
		Ft. in.	*Ft. in.*	*Ft. in.*		*Ft.*		*Ft. in.*	*Ft. in.*	*Ft. in.*		*Ft.*
000 and upwards	1	18 0	5 6	2 3	·6	133·7	1	18 0	5 6	2 3	·6	133·7
	2	24 0	5 6	2 6	·6	396·0	2	24 0	5 6	2 6	·6	396·0
	1	27 0	8 6	3 8	·6	504·9	2	22 0	5 6	2 6	·6	363·0
						1,034·6						892·7
	2 Life	28 0	8 6	3 6	·6	999·6	2 Life	28 0	8 6	3 6	·6	999·6
	6 Boats of	–	–	–	–	2,034·2	7 Boats of	–	–	–	–	1,892·3
0 to 1,000	1	18 0	5 6	2 3	·6	133·7	1	18 0	5 6	2 3	·6	133·7
	2	26 0	6 6	2 8	·6	540·8	2	24 0	5 6	2 6	·6	540·8
	1 Life	26 0	8 0	3 8	·6	457·6	2	22 0	5 6	2 6	·6	363·0
	4 Boats of	–	–	–	–	1,132·1	5 Boats of	–	–	–	–	1,037·5
0 to 800	1	18 0	5 6	2 3	·6	133·7	1	18 0	5 6	2 3	·6	133·7
	2	24 0	5 6	2 6	·6	396·0	2	24 0	5 6	2 6	·6	396·0
	1 Life	26 0	8 0	3 8	·6	457·6	2	22 0	5 6	2 6	·6	363·0
	4 Boats of	–	–	–	–	987·3	5 Boats of	–	–	–	–	892·7
0 to 500	1	16 0	5 6	2 3	·6	118·8	1	16 0	5 6	2 3	·6	118·8
	2	24 0	5 6	2 6	·6	396·0	2	24 0	5 6	2 6	·6	396·0
	1 Life	25 0	7 0	3 6	·6	367·5	2	22 0	5 6	2 6	·6	363·0
	4 Boats of	–	–	–	–	882·3	5 Boats of	–	–	–	–	877·8

Number of Tons Register.	Either					Or				
	Number of Boats.	Dimensions. Length.	Breadth.	Depth.	Factor.	Cubic Contents.	Number of Boats.	Dimensions. Length.	Breadth.	Depth.	Factor.	Cubic Contents.
		Ft. in.	*Ft. in.*	*Ft. in.*		*Ft.*		*Ft. in.*	*Ft. in.*	*Ft. in.*		*Ft.*
240 to 360	1	16 0	5 6	2 3	·6	118·8	1	16 0	5 6	2 3	·6	118·8
	1	22 0	5 6	2 5	·6	175·4	1	22 0	5 6	2 5	·6	175·4
	1 Life	22 0	6 6	3 3	·6	278·9	2	22 0	5 6	2 6	·6	363·0
	3 Boats of	–	–	–	–	573·1	4 Boats of	–	–	–	–	657·2
120 to 240	1	14 0	5 0	2 2	·6	91·0	1	14 0	5 0	2 2	·6	91·0
	1 Life	20 0	6 0	3 0	·6	216·0	2	22 0	5 6	2 6	·6	363·0
	2 Boats of	–	–	–	–	307·0	3 Boats of	–	–	–	–	454·0
60 to 120	1	14 0	5 0	2 2	·6	91·0	1	14 0	5 0	2 2	·6	91·0
	1 Life	16 0	5 6	2 9	·6	145·2	2	18 0	5 6	2 4	·6	277·2
	2 Boats of	–	–	–	–	236·2	3 Boats of	–	–	–	–	368·2
Under 60	1 Life	14 0	5 0	2 2	·6	91·0	–	–	–	–	–	–
	If the number of boats in this column are carried, one of them must be a launch of at least the capacity named.						If the number of boats in this column are carried, their cubic contents (equal in the aggregate to the cubic contents required) may be spread in any way over the whole number of boats. The lifeboat or lifeboats must be the largest boats				

Boat scale under the Passengers Act, 1855, s. 27.

46. *Boat Scale* under the "Passengers Act, 1855," section 27.

In vessels of 200 tons and upwards no boat of less than 90 feet of cubical contents is to be counted in the number.

In vessels of 600 tons and upwards, two of the boats should be lifeboats.

No greater number of boats need be taken than are sufficient to carry all the crew and passengers on board.

The cubic contents of the boats in the following Table are ascertained in the same way as those in the preceding Table, *i.e.*, by multiplying their outside length, their outside width, and their *inside* depth together, and then their product by ·6.

Registered Tonnage of Ship.	Number of Boats not less than	Sailing Vessels. Minimum Cubic Contents of Lifeboats.	Sailing Vessels. Minimum Cubic Contents of all the Boats of the Ship.	Steam Vessels. Minimum Cubic Contents of Lifeboats.	Steam Vessels. Minimum Cubic Contents of all the Boats of the Ship.
		Ft.	*Ft.*	*Ft.*	*Ft.*
Less than 200 tons	2	90·	236·4	138·	368·4
200 tons and less than 400 tons	3	120·	427·2	181·2	657·
400 „ „ „ 600 „	4	150·	723·	198·	877·2
600 „ „ „ 800 „	5	168·	1,038·	198·	1,038·
800 „ „ „ 1,000 „	5	240·	1,227·	198·	1,227·
1,000 „ „ „ 1,250 „	6	540·	1,527·	540·	1,527·
1,250 „ „ „ 1,500 „	6	540·	1,800·	540·	1,800·
1,500 tons, and upwards	7	556·8	2,160·	556·8	2,160·

47. As

47. As regards sail power there may be many questions; but if foreign-going steamers are fitted with sufficient sail power to enable them to work as sailing vessels in the event of their machinery becoming disabled no question need be raised. They should of course be provided with a complete suit of spare sails to be kept on board. All the sails must be examined by the surveyors, who must be perfectly satisfied with their efficiency, as also with that of the standing and running gear, at every survey. Sail power.

In the same way if home-trade steamers be fitted with sufficient sail power to enable them to steer in the event of their machinery becoming disabled no question need be raised.

The sails should be examined at every survey.

This question of sail power is one of the most difficult questions the surveyor has to deal with, and he should always be careful in any cases of doubt to apply to the Board of Trade for instructions, giving full particulars as to the rig of the ship and the amount of canvas, as the surveyors will be held responsible for any action they may take without first consulting the Board of Trade.

48. Every sea-going steam ship employed to carry passengers shall have the compasses properly adjusted from time to time; such adjustment, in the case of ships surveyed as herein mentioned, to be made to the satisfaction of the surveyor, and according to such regulations as may be issued by the Board of Trade. Compasses to be adjusted to surveyor's satisfaction.

The surveyor should satisfy himself as to the proficiency of the person whose signature is attached to the adjustment certificate in question.

49. With respect to the above, the Board of Trade regulations are that:—(1.) On the first survey of a new steamer, whether built of iron or wood, the surveyor should require the compasses to be properly adjusted or verified by a person selected by the shipowner as competent to adjust the compasses of ships. The certificate of such a person, to the effect that the compasses of the ship, if an iron ship, are properly adjusted and a table of errors furnished, or, if a wooden ship, are properly verified and a table of errors furnished, should be handed by the owners to the surveyor, before the surveyor gives his declaration, and should be returned with his declaration to be sent to the Board of Trade. Certificate on first survey. Ship to be swung.

If it should happen that a master of any vessel has not been able to procure a certificate of the adjustment of his compasses having been made, and it shall not appear to be from any negligence or fault of the master or owner, the surveyor may forward the declaration without it. The fact should, however, be noted on the face of the declaration, and the certificate of adjustment be forwarded to the Board of Trade afterwards by the Superintendent of the Mercantile Marine Office, who will hold the passenger certificates until a satisfactory compass certificate is supplied. But the surveyor should always endeavour, when possible, to obtain a compass adjustment certificate before he issues his declaration, otherwise he should strike out the clause relating to compasses in his declaration.

In the case of iron ships, a certificate as above is also to be obtained and transmitted with every declaration granted after the ship had been in dock for a general or periodical overhaul, or has been lying idle for a long time; as well as after repairs necessitating the removal or addition of any plates, beams, &c., from or to the hull of the ship, the boilers, funnel, masts, &c.

50. It is very important, especially in foreign-going passenger steam ships, that the standard compass should not be adjusted by any magnets, but that it should have its errors ascertained and applied when required. The compass should always stand in precisely the same place when it is used as it did when its errors were observed. Standard compass.

51. In other cases the surveyor should act as follows, viz.:— Certificate of master and mate to be taken in certain cases.

(*a.*) In the case of an iron ship, if she has not been into dock for a general or periodical overhaul, referred to in the preceding paragraph, or if she has not been lying idle for a long time, or if she has not undergone repairs necessitating the removal or addition of any plates, beams, &c., from or to the hull, boiler, funnel, masts, &c.; and—

(*b.*) In the case of a wooden ship—

The surveyor should, before he grants his declaration, receive a certificate from the owners to the following effect, viz.: "We, the undersigned, hereby certify that the "compasses of the steamer (*name of steamer*) are in all respects to our satisfaction. We "know the errors and can apply them."

Dated at this
day of 18 .

_____ Master.

_____ Mate.

"We hereby attest the above signatures, and certify that the said (*master's name*) "sailed as master, and that the said (*mate's name*) sailed as mate of the said vessel on her "last voyage, ending 18 .

_____ Owners."

This certificate must be signed by the master and mate, one of whom at least must have made the previous and is going to make the next voyage in the vessel, and must be attested by the owners.

(4.) If, however, the master or mate has not made the last voyage in the vessel, or if neither of them is going to make the next voyage in the vessel, or if he or they do not sign such a certificate as required above, or if the owners decline to attest it, the surveyor must then require the compasses to be re-adjusted, and must transmit a certificate from an adjuster as stated.

In the foreign-going steamers a boat's compass must be supplied for each of the life boats that are necessary to be carried.

Deck pumps to be fitted.

52. There must be in each compartment a pump of sufficient size which can be worked from the upper deck, and a rose or perforated box of sufficient size for each pump.

It is very desirable that the steam winches (if any) be so fitted and arranged that the deck pumps can be worked by them.

Deck pumps, when not worked by machinery, should have handles at least long enough for two men to work at them.

Valves, sounding pipes, &c.

53. There must be fitted at the bottom of each bulkhead a valve or cock which can be opened and shut from the upper deck, and there must be means for ascertaining the depth of water in each compartment, and also means for clearing the end of the suction pipe. When in order to get at the end of the suction pipe there is a trunk way leading from the upper deck to the suction of each pump, large enough for a man to go down to clear the end of the suction pipe, no question need be raised.

Engine-room pumps.

54. Pipes connected with pumps worked by the engines are also to be carried through the bulkheads into the compartments fore and aft of the engine-room, so that each compartment can be pumped out separately by the engines as well as by the deck pump. The pipes should be well secured where they pass through the bulkheads, and it is very desirable that cocks or valves be fitted between these suction pipes and the bulkheads, to be capable of being opened or shut from the upper or main deck.

Pumps not necessary in fore peak, &c.

55. In all sea-going screw vessels there must be a strong water-tight deck over the cast-iron tube aft so as to make a tank round the tube, and a properly fitted man-hole at the top or fore end, and collision bulkheads must be fitted in sea-going vessels; if they are not fitted, the surveyor should decline to grant a declaration before consulting with and getting the decision of the Board of Trade; these places are generally small, and the surveyor should not insist on a separate deck pump leading direct into them.

Steering gear.

56. The steering gear should not be too rigid amongst the gearing, as severe and sudden shocks, such as a sea hitting the rudder, are liable in such cases to carry something away. A spare tiller properly fitted to the rudder head, relieving tackles, &c. should in all foreign-going and home-trade steamers, be kept near the after-steering gear, ready for immediate service. Rudder pendants should also be securely fastened to the back of the rudder, with their ends led up to a place accessible in all weathers. In any case where the surveyor is not satisfied that the rudder pendants are made fast, so as to have sufficient power over the rudder, he should see that an efficient bumpkin is securely fitted, to which the rudder pendants must be made fast. Stops should be fitted on the rudder to prevent it going too far over or damaging the screw gear by the nuts travelling too far. If any cases are discovered where stops are improperly fitted, or are not fitted at all (and they cannot be fitted afloat), extra grummets or india-rubber washers should be fitted between the nuts on the screw gear, but stops properly fitted should be put on the first time the vessel goes into dry dock. The steering gear should be thoroughly overhauled at every survey, and taken to pieces and thoroughly examined at least once a year. The chains and blocks that are liable to interfere with or endanger the passengers or crew should be guarded by portable but properly secured guards.

It is very desirable that the man at the helm should be so placed that he has a clear look-out ahead, more especially in steamers that frequent crowded harbours or rivers.

Helm indicators.

57. In passing a helm indicator, the surveyor should ascertain by actual trial that whenever the pointer moves to the word "port" on the dial or plate, wherever that word may be, it shows that the helm is ported, and whenever the pointer points to the word "starboard," wherever that word may be, it means that the helm is starboarded.

Meaning of port helm.

58. In the foregoing directions it is assumed that "port helm" means that the helm is so moved as to turn the ship's head to the right, and "starboard helm" means that the helm is so moved as to turn the ship's head to the left.

Lead lines.

59. A deep-sea lead-line of at least 120 fathoms, a lead of at least 28 lbs. weight, and a suitable reel, together with at least two hand lead-lines of at least 25 fathoms and leads of at least 7 lbs., should be supplied to all foreign-going steamers. In home-trade steamers two hand lead-lines of 25 fathoms each and leads of at least 7 lbs. must be demanded. These are the minimum requirements. For a first class (*i. e.*, 12 months) declaration double the number of lines and leads must be provided. The surveyor should see that

that the lead-lines are properly marked. The following marks are those usually adopted:—

At	2	fathoms	a piece of leather split in two strips.
„	3	„	„ „ three strips.
„	5	„	„ white bunting.
„	7	„	„ red bunting.
„	10	„	„ leather with a whole.
„	13	„	„ blue bunting.
„	15	„	„ white buning.
„	17	„	„ red bunting.
„	20	„	a strand with two knots tied in it.

It is always best to have the lines fitted with calico for white marks, bunting for red marks, and serge for blue marks, because a man can tell the difference by the feel in the dark.

Anchors, chain cables, hawsers, warps, &c.

60. Surveyors must be very careful to see that each steamship they survey is provided with chain cables and anchors duly certified under the Chain Cable Acts. They will also see that the chain cables and anchors on board are sufficient for the service and in good condition. Proper hawsers and warps must also be supplied.

Statutory distress signals.

61. The signals specified in the first schedule of the Act of 1873 shall be deemed to be signals of distress.

In the day time.—The following signals numbered 1, 2, and 3, when used or displayed together or separately, shall be deemed to be signals of distress in the day time:—1. A gun fired at intervals of about a minute. 2. The international code signal of distress indicated by N.C. 3. The distant signal, consisting of a square flag having either above or below it a ball, or anything resembling a ball.

At night.—The following signals numbered 1, 2, 3, when used or displayed together or separately, shall be deemed to be signals of distress:—1. A gun fired at intervals of about a minute. 2. Flames on the ship (as from a burning tar barrel, oil barrel, &c.) 3. Rockets or shells, of any colour or description, fired one at a time at short intervals.

To be examined.

62. The means for making signals of distress are to be carefully examined by the surveyors, to see that they are kept dry and in good order, and are protected from fire and accident. The cannon or mortar, which is to be of at least the size below specified, is in good condition and ready for use. The means for making flames should be lights that burn in water, or some other approved arrangement.

Quantity to be provided.

Size of guns, &c.

63. The signals required are 12 blue lights (or six blue lights and six Holmes' patent storm and danger signal light), 12 rockets, each containing 16 ozs. of composition; and one gun of at least 3½ ins. in the bore, or one mortar of 5½ ins., with ammunition for 12 charges, or in the case of foreign-going passenger ships 24 charges. Each charge must contain 16 ozs. of pebble or bean powder in a flannel bag. An air-tight copper magazine, rammers, sponges, wads, priming wires, friction tubes, powder, flask with fine powder for priming, and means for firing and withdrawing charges should be provided and carefully examined.

Rocket lockers.

64. The locker for keeping the rockets, blue lights, &c., should not be air-tight, but should have sufficient small safe openings to allow of the escape of any moisture generated; by this means the rockets, blue lights, &c., can be kept for a long period. Red pyrotechnic lights are dangerous.

Special report to be sent of deficiencies.

65. Surveyors should send a special report to the Board of Trade in every case in which the regulation distress signals are not on board the passenger (emigrant) ships and sea-going passenger steamers which they may be called on to survey. And they should also, in such cases, decline to grant papers or declarations, unless a written guarantee is given to them that the signals shall be on board and an opportunity given for inspecting them before the ship sails.

Fire hose.

66. Passenger steamers going to sea are to be provided with a hose adapted for the purpose of extinguishing fire in any part of the ship, and capable of being connected with the engines of the ship, or with the donkey engine, if it can be worked from the main boiler. The surveyor must take care that it answers the required purpose.

The fire-hoses should be connected stretched, to judge of their length, and thoroughly examined at every survey, and at least once a year (and at any other time that the surveyor thinks it necessary) tested with the conductor in its place, by pumping water through them by the main or donkey engines at full speed. A proper conductor and metal bend or goose neck forms part of its equipment and must be provided. Generally, leather hoses are the most durable, and should be supplied when a first class (*i.e.*, a 12 months) declaration is required.

This hose should be connected with steam pumps.

Certificates of Masters, Mates, and Engineers.

Statutory requirements as to certificates;

67. No foreign-going ships, or home-trade passenger ship, is to be allowed to proceed to sea unless the master has obtained and possesses a valid certificate of competency or service;

cates of masters, mates, and engineers.

service; and no such ship, if of 100 register tons burden or upwards, is to go to sea as aforesaid, unless at least one officer besides the master has obtained and possesses a valid certificate appropriate to the grade of only mate therein, or to a higher grade.

From this, the surveyor will observe that in the case of ships under 100 tons burden the master is required to possess a certificate, and that in the case of ships above 100 tons burden there must be at least one certificated mate besides the master.

In the case of foreign-going ships which carry more than one mate, the master and the first and second mates must have appropriate certificates; but any persons acting as mates of a lower grade are not required to have certificates.

Under the provisions of "The Merchant Shipping Acts, &c., Amendment Act, 1862," no "foreign-going steamship," or "home-trade passenger steamship," can obtain a clearance or transire, or legally proceed to sea from any port in the United Kingdom, unless, in the case of a foreign-going steamship of 100 nominal horse-power or upwards, the first and second engineers, and in the case of a foreign-going steamship of less than 100 nominal horse-power, or a home-trade passenger steamship, the first or only engineer (as the case may be) have obtained and possess valid certificates, either of competency or service, appropriate to their several stations in such steamship, or of a higher grade.

All certificates of competency granted to masters and mates of foreign-going ships entitle the holders to go to sea in corresponding grades, or in any lower grade, in home-trade passenger ships, but certificates of service for foreign-going ships do not entitle the holders to go to sea as masters or mates in home-trade passenger ships.

Certificates for home-trade passenger ships do not entitle the holders to go to sea as masters or mates of foreign-going ships.

Surveyors to inspect certificates.

68. It will be the duty of the surveyor to report in his declaration that these certificates are such as required by the Act.

The surveyors are to state on their declarations, in the appropriate place, the number and description of these certificates.

The details of the officers' certificates should be taken from the certificates themselves at every survey, the surveyors carefully noting that by their certificates the officers are qualified for the positions they occupy.

Passenger Accommodation.

Passengers in foreign-going steamships.

69. "Foreign-going ship" shall include every ship employed in trading or going between some place or places in the United Kingdom, situate beyond the following limits; that is to say, the coasts of the United Kingdom, the Islands of Guernsey, Jersey, Sark, Alderney, and Man, and the Continent of Europe, between the River Elbe and Brest inclusive.

The upper weather deck, and the upper surface of the poop, forecastle, and spar deck being exposed to the weather are never to be included in the measurements for passengers in foreign-going steamers; nor are the poop, round-house, or deck-house to be measured for passengers unless they form part of the permanent structure of the vessel; but they should in all cases be railed round at the top to prevent children from falling overboard.

Care should be taken that the means provided for ventilation are sufficient to allow of a good supply of air in the event of the hatches being closed in bad weather. Places ventilated by hatches only, or in which provision is not made for a sufficient supply of air and light under ALL circumstances, should not be measured for passengers.

Foreign-going steamships carrying passengers, and not coming within the operation of the "Passengers Act, 1855," are to be measured as follows:—

Saloon or 1st Class. The number of properly constructed fixed berths or sofas that are fitted determine the number of passengers to be allowed, if sufficient light and ventilation is provided, and a reasonable amount of floor space. 2nd Class. The number is found in the same way as the 1st Class. The number of 3rd Class passengers may be determined in like manner, if berths are fitted, if not, the net area of the deck (that is after deducting all hatches and incumbrances) multiplied by the height between decks and the product divided by 72 gives the number to be allowed—six feet between decks is little enough height. The breadth of the deck is taken inside the water-way, or at the greatest tumble home if the sides do tumble home.

Deck to be caulked and to have proper hatches, &c.

70. All decks upon which passengers are carried, which are the main and lower decks only in foreign-going steamers, and floors must be caulked and properly secured; sufficient light and ventilation must be provided; scuttles and hatches are not considered as efficient means of ventilation; proper and sufficient means of ingress and egress must be fitted and be so arranged as to open and shut easily. Companions or booby-hatches must in all cases be fitted to the entrances to such passenger spaces. Surveyors should satisfy themselves that there are hatches to batten down in bad weather, or that otherwise the booby hatch is itself so strong, and so securely bolted, as to be part and parcel of the ship, and so fitted that it can be securely closed.

Deduction when stores are carried in passenger space.

71. When cargo or stores are carried in the space measured for passengers, one passenger is to be deducted for every 12 superficial feet of deck space so occupied.

Declarations for "foreign-going steamships" conveying passengers should be given in Form Surveys 1.

72. In

72. In some cases the passenger accommodation in foreign-going steamers comes under the provisions of the "Passengers Act, 1855," in which case the surveyor must in a measure be guided by the Act referred to regarding the number of passengers to be carried, and the boat capacity; but if one Act allows more passengers than the other, the smallest of the two numbers is to be the number of passengers allowed. No reduction in boat accommodation is to be allowed until the owner has previously, by special application, obtained the sanction of the Board of Trade. *See* proper Form Surveys 18.

Passengers limited if boat capacity is reduced.

73. "Home-trade ship" shall include every ship employed in trading or going within the following limits; that is to say, the United Kingdom, the Islands of Guernsey, Jersey, Sark, Alderney, and Man, and the Continent of Europe, between the River Elbe and Brest inclusive.

"Home-trade passenger ship" shall mean every home-trade ship employed in carrying passengers.

Passengers in home trade sea-going steamers.

In the following rules the words fore-cabin passengers are intended to include all passengers whether carried on deck or in the cabins, except passengers entered as after-cabin or saloon passengers in the way bill. This is intended to prevent the space allotted to fore-cabin passengers from being overcrowded. In many vessels the fore-cabin passengers are not allowed to go abaft a certain part of the deck, and they would be unduly crowded if their numbers were to exceed those allowed. All the passengers who are entered as fore-cabin passengers are to be allowed the use of all the space on deck not appropriated to after-cabin passengers.

74. All home-trade sea-going passenger steamers must have planked bulwarks of such a height as is in the surveyor's judgment necessary for the proper shelter and protection of the passengers, or of such a height as is necessary for their safety, and with a weather cloth, in addition, to give the required protection.

Height, &c. of bulwarks.

When the height of bulwarks in home-trade passenger steamers is four feet, or on raised quarter decks, three feet, no question need be raised, but in all cases the bulwarks must be close and of sufficient strength.

The number of passengers allowed to be carried in sea-going home-trade steamers is ascertained as follows:—

75. The clear area of the deck in square feet is divided by nine; the quotient is the number allowed to be carried on deck in summer. The sponsons in paddle-wheeled steamers are not to be included in the measurement of vessels for passengers. Passengers in home-trade steamers are allowed to be carried on the main and the lower decks only.

Number of passengers on deck, how determined.

The length of the deck is taken from abaft the windlass to forward of the wheel aft, if there is one, if there is not a wheel aft to where passengers can stand properly and clear of the tiller.

The breadths are taken from inside the gutter water-way, or the inside edge of the raised covering board or inside edge of the rail, if the bulwarks tumble home further than the inside edge of water-way or covering board. Clear area means the space after all incumbrances such as hatchways, skylights, companions, steam chest casings, funnel casings, wheel, windlass, binnacles, masts, dunnage for luggage, boats carried inboard, and fittings for cattle, &c., are deducted; a raised quarter-deck, if the bulwarks are close and of sufficient height and strength, may be measured, but a poop-deck bridge or spar-deck should not be measured, nor should any deck when the bulwarks are open, or are not of sufficient height and strength. The whole clear space on the deck may be appropriated to the fore-cabin passengers, or it may be divided into any proportion between the fore-cabin and the after-cabin passengers, as may be determined on at the time of the survey.

In cases where adequate shelter is not provided for deck passengers, the whole number of passengers must not exceed one-fourth of the number representing the gross tonnage, with the addition of the number of after-cabin passengers calculated as before.

Where cargo, cattle, &c., are carried in the space measured for passengers in home-trade passenger steamers the following deductions are to be made:—

For every square yard of space measured for passengers occupied by cattle or other animals, or by cargo or other articles - - -	} one passenger.

If, however, the whole number so to be deducted on account of cattle or cargo carried on deck equals or exceeds the original number of passengers due to the deck space, no further deductions are to be made from the number of passengers for any additional cargo so carried; or, in other words, when no passengers are carried on deck, it may be covered with cattle or cargo, without any reduction on that account in the number of passengers carried in the cabins.

Between the 31st October and the 1st April the number of passengers, which according to the preceding rules is allowed to be carried on deck during summer, is to be reduced one-third, unless there is accommodation below, or in properly constructed cabins on deck, for half the full complement of passengers. This reduction is not to be made in the case of foreign-going steamships.

One-third, however, of the space on deck measured for passengers may be occupied by cattle and cargo without any reduction of the winter number stated in the certificate; or, in other words, during the winter the deduction from the number of passengers on account of cattle and cargo, is not to commence until one-third of the whole space measured is occupied by cattle or cargo.

 76. The

Number of passengers below deck, how ascertained.

76. The number of passengers to be carried in the after-cabins or saloons is determined by the number of the berths or sofas properly constructed for sleeping berths, to which add the number due to the space on deck appropriated to the saloon passengers, and the sum will be the total number of after-cabin passengers allowed to be carried. The floor space of saloons, cabins, state rooms, and passages must not be measured, unless in saloons and cabins in which berths are not fitted, then the clear available space is to be measured, and one passenger allowed for every nine square feet; when sofas or seats are fitted the measurements are to be taken from the back of the said sofas or seats. All passenger accommodation should be properly lighted and ventilated, and proper means of ingress and egress provided. The number of fore-cabin passengers is obtained in the same way as the after-cabin number; all floors of passenger accommodation must be caulked and properly secured; the lower hold must not be considered as proper accommodation for passengers, neither are spaces which consist of temporary accommodation upon the cargo, nor spaces lighted and ventilated by hatches. If the whole number of passengers obtained by the foregoing method exceeds the number representing the gross tonnage of the vessel, then the number of passengers must be reduced until the number does not exceed the number denoting the gross tonnage of the vessel; the number to be deducted may either be taken from the number of fore-cabin passengers or from the after-cabin passengers, or from both, in any proportion as may be determined on at the time of the survey.

Passengers in deck-houses.

77. When there are deck-houses and only narrow spaces between the sides of the deck-house and the bulwarks, such narrow spaces are not measured for passengers. When there is a deck-house amidships for the accommodation of after or first-class passengers, and the fore cabin or second-class accommodation as either below, aft, or in a deck-house aft, then the whole of the clear space on deck should be appropriated for the use of second-class passengers.

Declarations for home-trade ships conveying passengers are to be given on Form Survey 2.

Plying limits for excursion and river certificates.

78. The river or smooth water, the partially smooth water, and the excursion limits of the various ports are shown in the table (following), and where limits are to be inserted the surveyors are to be careful to insert those and no other limits in their declarations.

TABLE of the LIMITS to be inserted in the DECLARATIONS of SURVEYORS.

Col. 1. Name of Port.	Form Survey 5. Col. 2. Smooth Water Limits.	Form Survey 4. Col. 3. Partially Smooth Water Limits.	Form Survey 3. Col. 4. Excursion Limits.
Aberdeen	All within Aberdeen	Nil	Nil.
Bristol	Portishead	The Holmes	Tenby or Ilfracombe.
Bowness	Anywhere on the Lake	Nil	Nil.
Boston	Above the Elbow Buoy	The Lynn Well Light-ship	Grimsby or Wells.
Berwick (North)	Nil	Within a line from Berwick to Anstruther.	*See* Leith.
Belfast	Holywood	Within Carrickfergus and Bangor, and to Groomspoint.	Larne and the South Rock Lighthouse.
Barrow	Walney Islands	Places within Morecambe and Lancaster Bays.	Liverpool.
Brigg (Hull)	Same as Hull	Nil	Nil.
Carlisle	Above Carlisle	Dumfries and Southerness	Whitehaven or Kirkcudbright.
Cardiff	Penarth	The Holmes	Tenby.
Carnarvon	Inside Carnarvon Bar and Priestholm Island.	Conway	Nil.
Conway	On the River Conway	Any place between Priestholm Island and Carnarvon Bar.	Liverpool.
Cork	A line from Camden to Carlisle Forts.	A line from Cork Head to Poor Head.	Youghal or Kinsale.
Campbeltown	In the Harbour	Nil	*See* Glasgow.
Dartmouth	River Dart	Nil	Inside a line from Start Point to Portland Bill.
Dover	Nil	Nil	Rye or Margate.
Dundee	New Railway Bridge at Dundee.	Broughty Castle	Montrose or Fife Ness.
Drogheda	Nil	Nil	Dundalk and Balbriggan.
Dundalk	Nil	Nil	Drogheda and Kilkeel.
Dublin	Nil	Kingstown	Howth or Wicklow.
Douglas (I.M.)	Nil	Nil	*See* Liverpool.
Fleetwood	All above the upper Lighthouse.	Places within Morecambe and Lancaster Bays.	Liverpool.
Falmouth	A line from Zose Point to Pendennis Point.	For special St. 4a. Declarations Black Head or Gull Rock.	Lizard or Start Points.
Folkestone	Nil	Nil	Rye or Margate.
Galway		Kinvarra	Kilkerrin or Liscannon Bays inside the Arran Isles.

Col. 1. Name of Port.	Form Survey 5. Col. 2. Smooth Water Limits.	Form Survey 4. Col. 3. Partially Smooth Water Limits.	Form Survey 3. Col. 4. Excursion Limits.
Gloucester	Sharpness Point	Bristol, Newport, or any place above the Holmes.	Tenby or Ilfracombe.
Gainsborough. (*See* Hull.)	—	—	—
Glasgow	Dunoon	Cumbray and Skipness	Inverness per Crinan and Caledonian Canals, and to a line from Ayr to Campbeltown, inside the Island of Arran.
Grimsby	Hull and New Holland.	Grimsby	Scarborough or Lynn.
Goole	Hull	Grimsby	*See* Hull.
Hartlepool	Nil	Nil	Newcastle or Scarborough.
Hull	Hull and New Holland.	Grimsby	Lynn or Scarborough.
Inverness	Inwards to Fort William	Outwards to Loch Cromarty, Nairn, and Three Kings; inwards to south end of Loch Linnhe and west end of Sound of Mull.	Nil.
Ipswich	Languard Fort	Walton-on-the-Naze	Orford Ness and Walton-on-the Naze.
Lancaster	Lancaster Harbour	Places within Morecambe and Lancaster Bays.	Whitehaven or Liverpool.
Leith	Queensferry	North Berwick and Anstruther	Fife Ness to St. Abbs Head.
Limerick	Foynes	Kilcradine Lighthouse	Loophead and Tralee.
Littlehampton	River Arun above Littlehampton Pier.	Nil	Nil.
Londonderry	Moville	Nil	Port Rush and Malinhead.
Lowestoft	Nil	Nil	Cromer or Aldborough.
Liverpool	The Rock Lighthouse	The Bell Buoy and N.W. Lightship.	Any places within the Menai Straits, or to Fleetwood.
London	Gravesend	A line from St. Osyth Point to Fore Ness.	Harwich or Dover.
Milford	Dale Bay	St. Anne's Lighthouse	Swansea or St. David's Head.
Norwich	Yarmouth	Nil	Nil.
Neath	Nil	Swansea	Tenby.
Newry	Warrenpoint	Carlingford and Whitehouse Point	Dundalk and Kilkeel.
Newcastle, North and South Shields.	Tynemouth Bar	Nil	Berwick or Scarborough.
Padstow	Padstow Harbour above a line from Gun Point to Brea Hill.	A line from Stepper Point to Trebetherick Point.	—
Penzance		For special St. 4a. declarations, a line drawn from Mousehole to the eastern point of St. Michael's Mount.	Cape Cornwall or Falmouth.
Portsmouth	Inside Portsmouth Harbour.	St. Helen's and the Needles, within the Isle of Wight, and to Langston Harbour. For small launches not carrying boats: *In Summer*, a line from Ryde to Langston Harbour inside the Isle of Wight to Hurst Castle. *In Winter*, Spithead.	Weymouth West to Brighton East.
Preston	Lytham	Nil	Barrow or Liverpool.
Poole	In the Harbour	Nil	Weymouth or Portsmouth.
Plymouth	Inside Drakes Island	The Breakwater	Lizard or Start Points.
Rochester	Sheerness and to Whitstable inside Sheppey.	The Nore and Margate (*see* London).	Dover or Harwich.
Swansea	Nil	Neath	Ilfracombe or Milford.
Sunderland	Sunderland Bar	Nil	Scarborough or Berwick.
Stockton	Nil	Nil	Bridlington or Newcastle.
Southampton	Calshot	St. Helen's and the Needles, inside Isle of Wight and to Langston Harbour. *See* Portsmouth for limits for small launches.	Weymouth or Brighton.
Scarborough	Nil	Nil	Newcastle or Hull.
Teignmouth	Teignmouth Harbour	Nil	Portland Bill or Start Point.
Waterford	Passage	Dunmore	Dungarvan and Cringley.
Wigtown	Nil	Within Wigtown Bay	Mull of Galloway or Southerness.
Wisbeach. (*See* Boston.)	—	—	—
Weymouth	Nil	Portland Harbour	Portsmouth or Start Point.
Whitby	Nil	Nil	Bridlington or Newcastle.

Number of passengers for excursion steamers, how to be determined.

79. For steamers used in excursions (*see* Column 4 of the Table) the rules for measuring and calculating the numbers are the same as in other sea-going home-trade steamers, except that, if application is made for an excursion certificate for short distances along the coast during daylight, the number originally calculated at nine superficial feet to each passenger, should it exceed the gross tonnage of the vessel, need not be diminished so as to bring it down to that number. These vessels are to have all the equipments and requirements of home-trade steamers, and are to be of such a substantial character as to be capable of standing bad weather in the event of being caught in it.

Where cargo, cattle, &c. are carried in the space measured for passengers in excursion steamers the following deductions are to be made :—

For every square yard of space measured for passengers occupied by cattle or other animals, or by cargo or other articles - - - } one passenger.

Declarations for excursion steamers conveying passengers are to be given on Form Survey 3.

Number of passengers for river steamers, how to be determined.

80. The measurements are to be made in the same manner as in home-trade sea-going steamers, except that after-saloons only are to be included.

There will be no distinction between fore-cabin and after-cabin passengers.

River steamers are divided into those which ply on waters parts of which only are smooth, and those which ply exclusively on smooth water.

Taking this division—

For steamers which ply in partially smooth water (*see* Column 3 of the Table of Limits), divide the number of superficial feet on deck, obtained as above, by six, and the clear space in the after-saloon by nine, and the sum of these quotients will be the number of passengers to be allowed.

It will usually be found that the space in front of the windlass is (more especially in sharp boats) nearly wholly taken up by the anchors and gear connected with them, and is not suitable for passenger accommodation, except in dead smooth water. Seats on skylights or companion openings must not be allowed for passengers, as the full area of the opening in the deck must be deducted.

The following deductions are to be made in the last-mentioned class of steamers for cattle or cargo carried in the space measured for passengers, viz. :—

For every square yard of space measured for passengers occupied by cattle or other animals, or by cargo or other articles - - - } one and a half passengers.

A reduction is to be made during the winter months in precisely the same manner as in home-trade sea-going steamers.

These vessels are to be provided with a foresail and jib bent, a suitable anchor and cable, a compass properly adjusted, a regulation life-boat suspended by suitable davits, one dozen life-buoys of the regulation size and pattern, and two safety valves, one of which at least must be a Parliamentary valve of the regulation size on each boiler.

River steamers plying in smooth water only, passengers, equipment, &c.

81. For smooth water steamers (*see* Column 2 of the Table) divide the number of superficial feet on deck, obtained as above, by three, and the clear space in the after-saloon by nine, and the sum of these quotients is the number of passengers to be allowed.

The following deductions are to be made in the last-mentioned class of steamers for cattle or cargo carried in the space measured for passengers, viz. :—

For every square yard of space measured for passengers occupied by cattle or other animals, or by cargo or other articles - - - } three passengers.

No reduction is to be made in the winter months.

These vessels are to have a suitable anchor and cable, and two regulation life-buoys (except, where plying within Survey 5 limits, they are exposed to danger by overcrowding or collision, in which case the dozen regulation life-buoys and the regulation life-boat must be demanded), and two safety valves, one of which at least must be a Parliamentary valve of the regulation size on each boiler.

Declarations for steamers conveying passengers within the partially smooth water limits are to be given on Form Survey 4, and those within smooth water limits on Form Survey 5.

Passengers in vessels of peculiar construction.

82. If, from any peculiar construction of any vessel there should be an unusual amount of permanent deck incumbrance, or an unusual amount of accommodation, so as greatly to reduce or increase the passenger accommodation, the case should be specially reported.

Alteration in passenger spaces.

83. When the passenger accommodation is increased whilst a certificate is in force, and the owners wish the number of passengers such increased space will accommodate inserted in their certificate before the next survey, the vessel should be remeasured and a fresh

a fresh declaration issued. Also, if the passenger accommodation is known to have been decreased whilst a certificate is in force, the fact should be reported to the Board of Trade, when the certificate in force will be cancelled; and if the owners wish the vessel still to carry passengers, she must be remeasured and a fresh declaration issued. In such cases a fee of one pound will be charged. In no case is a surveyor to alter the number of passengers in a vessel's passenger certificate.

Boilers and Superheaters.

The surveyor's duty and responsibility in fixing pressures.

84. The surveyor is required by the Act to fix the limits of weight to be placed on the safety-valves of passenger steam ships. In performing this very responsible and onerous duty, he must be very careful, as in the event of accident it will be necessary for him to satisfy the Board of Trade that he used due caution. On the one hand he must be careful as regards safety, and on the other hand he must not unduly reduce the pressure on a boiler. The surveyor having himself fixed the limits of the weight, is then required to declare that in his judgment the boiler and machinery are sufficient for the service intended, and in good condition, and that they will be sufficient for twelve months or such other period as he may, in his judgment, determine. For his guidance, the following directions are given, and he should not depart from them in any case, without first reporting, specially, to the Board of Trade, with full particulars, and asking for instructions.

Plans of boilers submitted to surveyors.

85. The surveyor fixes the pressure on boilers by a series of calculations of the strength of the various parts, and according to the workmanship and material. The Board of Trade were requested by certain shipbuilders and shipowners to arrange for receiving, for examination by their surveyors, plans and particulars of the boilers, before the commencement of manufacture, by these means hoping to prevent questions arising after the boilers are finished and on board. This practice has been found to work well in saving time to the surveyors, and in preventing expense, inconvenience, and delay to owners. The principal surveyors should therefore receive and report on any plans that may be submitted in due course with the Form Surveys 6. They are not to report on any tracing or plan that is not accompanined by that form.

When the surveyor has received plans and tracings of new boilers or of alterations of boilers, and has approved of them, he will of course be careful in making his examination from time to time to see that they are followed in construction. When he has not had the plans submitted, but is called in to survey a boiler, he will of course measure the parts of the boiler, note the details of construction, and if necessary, bore the plates to ascertain their thickness, &c., before he gives his declaration. And in the event of any novelty in construction, or of any departure from the practice of staying and strengthening noted in these instructions, he should report full particulars to the Board of Trade before fixing pressure.

The surveyor cannot declare a boiler to be safe of whose construction, material, and workmanship he is not fully informed. He should therefore be very careful how he ventures to give a declaration for a boiler that he is not called in to survey until after it is completed aud fixed in the ship.

Pressures how to be determined for flat surfaces.

86. On flat surfaces the pressure allowed should not exceed 5,000 lbs. to each effective square inch of sectional area of stay, but if in any case a greater pressure is asked, where the flat surfaces are stiffened by T or L irons, the mode of stiffening must be submitted to the Board of Trade for their consideration and approval before a greater pressure than that mentioned above is allowed per effective sectional area of stay.

The areas of diagonal stays are found in the following way:—Find the area of a direct stay needed to support the surface, multiply this area by the length of the diagonal stay, and divide the product by the length of a line drawn at right angles to the surface supported to the end of the diagonal stay; the quotient will be the area of the diagonal stay required.

When gusset stays are used their area should be in excess of that found in the above way.

Girders for flat surfaces.

87. When the tops of combustion boxes or other parts of a boiler are supported by solid rectangular girders the following formula, which is used in the Board of Trade, will be useful for finding the working pressure to be allowed on the girders, assuming that they are not subjected to a greater temperature than the ordinary heat of steam, and in the case of combustion chambers that the ends are fitted to the edges of the tube plate and the back plate of the combustion box.

$$\frac{C \times d^2 \times T}{(W - P)\, D \times L} = \text{Working pressure.}$$

W = Width of combustion box in inches.

P = Pitch of supporting bolts in inches.

D = Distance between the girders from centre to centre in inches.

L = Length of girder in feet.

d = Depth of girder in inches.

T = Thickness of girder in inches.

C = 500 when the girder is fitted with one supporting bolt.

C = 750 when the girder is fitted with two or three supporting bolts.

C = 850 when the girder is fitted with four supporting bolts.

The working pressure for the supporting bolts and for the plate between them shall be determined by the rule for ordinary stays.

Plates for flat surfaces.

88. The pressure on plates forming flat surfaces will be easily found by the following formula which is used in the Board of Trade.

$$\frac{C \times (T + 1)^2}{S - 6} = \text{Working pressure.}$$

T = Thickness of the plate in sixteenths of an inch.

S = Surface supported in square inches.

C = Constant according to the following circumstances.

C = 100 when the plates are not exposed to the impact of heat or flame, and the stays are fitted with nuts and washers, the latter being at least three times the diameter of the stay and two-thirds the thickness of the plates they cover.

C = 90 when the plates are not exposed to the impact of heat or flame and the stays are fitted with nuts only.

C = 60 when the plates are exposed to the impact of heat or flame and steam in contact with the plates, and the stays fitted with nuts and washers, the latter being at least three times the diameter of the stay and two-thirds the thickness of the plate they cover.

C = 54 when the plates are exposed to the impact of heat or flame and steam in contact with the plate, and the stays fitted with nuts only.

C = 80 when the plates are exposed to the impact of heat or flame, with water in contact with the plates, and the stays screwed into the plate and fitted with nuts.

C = 60 when the plates are exposed to the impact of heat or flame, with water in contact with the plate, and the stays screwed into the plate, having the ends riveted over to form a substantial head.

C = 36 when the plates are exposed to the impact of heat or flame, and steam in contact with the plates, with the stays screwed into the plate and having the ends riveted over to form a substantial head.

When the riveted ends of screwed stays are much worn, or when the nuts are burned, the constants should be reduced, but the surveyor must act according to the circumstances that present themselves at the time of survey, and it is expected that in cases where the riveted ends of screwed stays in the combustion boxes and furnaces are found in this state it will be often necessary to reduce the constant 60 to about 36.

Wet-bottom boilers.

89. Having regard to the explosion of the boilers of the "Fanny" and "Druid," and to many cases in which very serious defects have been discovered, the surveyors should take care that wet-bottomed boilers, the outside of the bottom of which cannot be seen, are lifted for inspection at least once in every four years, or oftener if the surveyor considers it necessary. It will often be found necessary long before this to reduce the pressure, unless the boilers are lifted from their seats for the surveyor to judge of their efficiency. If the owners in any special case have any good reasons for not wishing to lift them when the surveyor requires it, the surveyor should submit the whole case in detail to the Board of Trade for their consideration. The surveyor must recollect that he is not to certify as sufficient any boiler respecting which he cannot thoroughly satisfy himself.

Cylindrical boilers.

90. It has been represented to the Board of Trade that boilers well constructed, well designed, and made of good material should have an advantage in the matter of working pressure over boilers inferior in any of the above respects, as unless this is done the superior boiler is placed at a disadvantage, and good workmanship and material will be discouraged. The Board of Trade surveyors have endeavoured for some time to take all these points into consideration in fixing pressure, and for this purpose the following rules were prepared, and at the request of engineering firms subsequently circulated.

When cylindrical boilers are made of the best material with all the rivet holes drilled in place and all the seams fitted with double butt straps each of at least $\frac{7}{8}$ the thickness of the plates they cover, and all the seams at least double riveted with rivets having an allowance of not more than 50 per cent. over the single shear, and provided that the boilers have been open to inspection during the whole period of construction, then 6 may be used as the factor of safety; but the boilers must be tested by hydraulic pressure to twice the working pressure in the presence and to the satisfaction of the Board's surveyors.

But

But when the above conditions are not complied with, the additions in the following scale must be added to the factor 6, according to the circumstances of each case:—

A.	·15	To be added when all the holes are fair and good in the longitudinal seams, but drilled out of place after bending.
B.	·3	To be added when all the holes are fair and good in the longitudinal seams, but drilled out of place before bending.
C.	·3	To be added when all the holes are fair and good in the longitudinal seams, but punched after bending instead of drilled.
D.	·5	To be added when all the holes are fair and good in the longitudinal seams, but punched before bending.
E.*	·5	To be added when the holes are not fair and good in the longitudinal seams.
F.	·1	To be added if the holes are all fair and good in the circumferential seams, but drilled out of place after bending.
G.	·15	To be added if the holes are fair and good in the circumferential seams, but drilled before bending.
H.	·15	To be added if the holes are fair and good in the circumferential seams, but punched after bending.
I.	·2	To be added if the holes are fair and good in the cicumferential seams, but punched before bending.
J.*	·2	To be added if the holes are not fair and good in the circumferential seams.
K.	·2	To be added if double butt straps are not fitted to the longitudinal seams, and the said seams are lap and double riveted.
L.	·1	To be added if double butt straps are not fitted to the longitudinal seams, and the said seams are lap and treble riveted.
M.	·3	To be added if only single butt straps are fitted to the longitudinal seams, and the said seams are double riveted.
N.	·15	To be added if only single butt straps are fitted to the longitudinal seams, and the said seams are treble riveted.
O.	·1	To be added when any description of joint in the longitudinal seams is single riveted.
P.	·1	To be added if the circumferential seams are fitted with single butt straps and are double riveted.
Q.	·2	To be added if the circumferential seams are fitted with single butt straps and are single riveted.
R.	·1	To be added if the circumferential seams are fitted with double butt straps and are single riveted.
S.	·1	To be added if the circumferential seams are lap joints and are double riveted.
T.	·2	To be added if the circumferential seams are lap joints and are single riveted.
U.	·25	To be added when the circumferential seams are lap and the streaks or plates are not entirely under or over.
V.	·3	To be added when the boiler is of such a length as to fire from both ends, or is of unusual length, such as flue boilers; and the circumferential seams are fitted as described opposite P., R., and S., but of course when the circumferential seams are as described opposite Q. and T., V ·3 will become V ·4.
W.*	·4	To be added if the seams are not properly crossed.
X.*	·4	To be added when the iron is in any way doubtful, and the surveyor is not satisfied that it is of the best quality.
Y.	1·65	To be added if the boiler is not open to inspection during the whole period of its construction.

Where marked * the allowance may be increased still further if the workmanship or material is very doubtful or very unsatisfactory.

The strength of the joints is found by the following method :—

$$\frac{\text{(Pitch—Diameter of rivets)} \times 100}{\text{Pitch}} = \left\{\begin{array}{l}\text{Per-centage of strength of plate at joint as}\\ \text{compared with the solid plate.}\end{array}\right.$$

$$\frac{\text{(Area of rivets} \times \text{No. of rows of rivets)} \times 100}{\text{Pitch} \times \text{thickness of plate.}} = \left\{\begin{array}{l}\text{Per-centage of strength of}\\ \text{rivets as compared with the}\\ \text{solid plate.*}\end{array}\right.$$

Then take iron as equal to 23 tons and use the smallest of the two per-centages as the strength of the joint, and adopt the factor of safety as found from the preceding scale :—

$$\frac{(51{,}520 \times \text{per-centage of strength of joint}) \times \text{twice the thickness of the plate in inches}}{\text{Inside diameter of the boiler in inches} \times \text{factor of safety}} = \left\{\begin{array}{l}\text{Pressure to be}\\ \text{allowed per}\\ \text{square inch}\\ \text{on the safety}\\ \text{valves.}\end{array}\right.$$

Plates that are drilled in place *must* be taken apart and the burr taken off, and the holes slightly countersunk from the outsides.

Butt straps *must* be cut from plates and *not* from bars, and must be of as good a quality as the shell plates, and for the longitudinal seams *must* be cut across the fibre. The rivet holes may be punched or drilled when the plates are punched or drilled OUT of place, but when drilled in place must be taken apart and the burr taken off and slightly countersunk from the outside.

When single butt straps are used and the rivet holes in them punched, they *must* be one-eighth thicker than the plates they cover.

The diameter of the rivets *must* not be less than the thickness of the plates of which the shell is made, but it will be found when the plates are thin, or when lap joints or single butt straps are adopted, that the diameter of the rivets should be in excess of the thickness of the plates.

Dished ends that are not truly hemispherical must be stayed; if they are not theoretically equal in strength to the pressure needed, they must be stayed as flat surfaces, but if they are theoretically equal in strength to the pressure needed, the stays may have a strain of 10,000 lbs. per effective square inch of sectional area.

Surveyors will remember that the strength of a sphere to resist internal pressure is double that of a cylinder of the same diameter and thickness.

All man-holes and openings must be stiffened with compensating rings of at least the same effective sectional area as the plates cut out, and in no case should the plate rings be less in thickness than the plates to which they are attached. The openings in the shells of cylindrical boilers should have their shorter axes placed longitudinally. It is very desirable that the compensating rings round openings in flat surfaces be made of L or T iron.

Circular furnaces.

91. Circular furnaces with the longitudinal joints welded or made with a butt strap :—

$$\frac{90{,}000 \times \text{the square of the thickness of the plate in inches}}{\text{Length in feet} + 1) \times \text{diameter in inches}}$$

= working pressure per square inch. Without the Board's special approval of the plans the pressure is in no case to exceed

$$\frac{8{,}000 \times \text{thickness in inches}}{\text{diameter in inches.}}$$

The length to be measured between the rings if the furnace is made with rings.

If the longitudinal joints, instead of being butted, are lap-jointed in the ordinary way, then 70,000 is to be used instead of 90,000, excepting only where the lap is bevelled and so made as to give the flues the form of a *true* circle, when 80,000 may be used.

When the material or the workmanship is not of the best quality, the constants given above must be reduced, that is to say, the 90,000 will become 80,000, the 80,000 will become 70,000, the 70,000 will become 60,000; and when neither the material nor the workmanship are of the best quality, such constants will require to be further reduced, according to circumstances and the judgment of the surveyor, as in the case of old boilers. One of the conditions of best workmanship must be that the joints are either double riveted with single butt straps or single riveted with double butt straps, and the holes drilled after the bending is done and when in place, and afterwards taken apart, the burr on the holes taken off, and the holes slightly countersunk from the outside.

Cylindrical superheaters.

92. The strength of the joints and the factor of safety is found in a similar manner as for cylindrical boilers and steam receivers, but instead of using 51,520 lbs. as the tensile strength of iron, 30,000 lbs. is adopted, unless where the heat or flame impinges at or nearly at right angles to the plate, then 22,400 lbs. is substituted.

In

* If the rivets are exposed to double shear, multiply the per-centage as found by 1·5.

In all cases the internal steam pipes should be so fitted that the steam in flowing to them will pass over all the plates exposed to the impact of heat or flame.

Superheaters should, as regards survey, be deemed to be the most important part of the boilers, and must be inspected inside and out; those that cannot be entered (on account of their size) must have a sufficient number of doors through which a thorough inspection of the whole of the interior can be made.

Special attention should be paid to the survey of superheaters, as with high pressure the plates may become dangerously weak, and not give any sound to indicate their state when tested with a hammer; the plates should, therefore, be occasionally drilled.

Before commencing the survey it is prudent to question the engineer officers as to the tendency of the boilers to flame; if flaming is a frequent occurrence extra care must be taken in the survey and in fixing the pressure to be allowed, as the strength of the plate is often reduced to about four tons per square inch in its tensile strength. Drain pipes must in all cases be fitted to superheaters in which a collection of water in the bottom is possible.

Superheaters that can be shut off from the main boilers must be fitted with a Parliamentary safety valve of sufficient size, but the least size passed without special written authority, should be 3 inches diameter.

The flat ends of all boilers, as far as the steam pace extends, and the ends of superheaters, should be fitted with shield or baffle plates where exposed to the hot gases in the uptake; as all plates subjected to the direct impact of heat or flame are liable to get injured unless covered with water.

Donkey boilers.

93. Donkey boilers that are in any way attached to or connected with the main boilers, or with the machinery used for propelling the vessel, must be surveyed and be fitted the same way as the main boilers, and have a water and steam gauge, and all other fittings complete, and, as regards safety valves, must comply with the same regulations as the main boilers.

Stop valves.

94. No boiler or steam chamber is to be so constructed, fitted, or arranged as that the escape of steam from it through the safety valve required by the Act of Parliament can be wholly or partially intercepted by the action of any other valve.

Gauges, &c.

95. Each boiler must be fitted with a glass water-gauge, at least two test cocks, and steam-gauge; that is to say, each boiler must be fitted with all fittings as complete as if there was only one boiler. Boilers that fire both ends, and those of unusual width, must have water-gauges and test cocks at each end or side, as the case may be. When a steamer has more than one boiler, and these boilers are fitted with stop-valves, each boiler must be treated as a separate one, and have all the requisite fittings.

No new arrangement to be sanctioned, but plans to be submitted to Board of Trade.

96. Surveyors are to be most careful not to give any official sanction to any new arrangement or construction of marine steam boilers without first obtaining the permission of the Board in writing, nor are they allowed to give any written approval of any invention or arrangement unless by direction of the Board of Trade; and whenever they know that any invention or new arrangement is to be fitted to a vessel that is intended to have a passenger certificate, they should, as soon as possible, with a view to preventing subsequent delays and questions, obtain plans, and submit the same for the consideration of the Board of Trade.

Inside of all boilers to be examined.

97. On every survey of a passenger steamship, the Board of Trade expect and desire the surveyor to go inside the boilers, and make a thorough personal examination.

Declarations must not be granted for boilers when the manhole doors are not large enough or are so placed that the surveyors cannot get into the boiler, but when the boilers are not large enough for the surveyors to get into they should see them tested by hydraulic pressure at every survey. In the case of old boilers the surveyors must use their own judgment as to the necessary pressure to be applied (this is in no way to interfere with the instructions to test all new boilers to double their working pressure, nor with the proper internal examination of all boilers that are large enough for the surveyors to get into).

Whenever it is only stays that prevent getting in he must order their removal, and he must see them properly replaced before granting his declaration.

If for special reasons (and for special reasons only) the surveyor cannot go inside, he must distinctly state on the face of his declarations his reasons for not being able to do so.

Surveyors not to go into hot boilers.

98. If the boiler is too hot for a surveyor to examine the inside efficiently, and with safety and convenience, he should decline to examine the boiler, and absolutely refuse to grant a declaration until he can make an efficient internal examination.

Strength of boilers to be ascertained, and working pressure fixed by calculation.

99. Before testing a boiler, the surveyor should examine the boiler, take the necessary measurements, and calculate what the working pressure shonld be, in accordance with the Board of Trade regulations, and only test to double the working pressure; if the test is not satisfactory, the defects must be made good, and the boiler re-tested.

This instruction applies to superheaters and steam chests, as well as to boilers.

This course will enable any necessary alterations to be made by the makers before the boilers are finally surveyed, and prevents delay or disappointment. The surveyor who grants the declaration should not give a greater or less pressure without first consulting the surveyor in whose presence the boilers were tested, and if any difference of opinion then exists, the matter should be at once referred to the Board of Trade.

The surveyor who grants the declaration must examine the boilers thoroughly, and will be held responsible for the pressure allowed, in the absence of special instructions from the Board.

Hydraulic test.

100. Surveyors should see all new boilers, and boilers that have been taken out of the ship for a thorough repair, tested by hydraulic pressure up to at least double the working pressure that will be allowed previous to the boilers being placed in the vessel to test the workmanship, &c.; but the working pressure is to be determined by the stay power, thickness of plates, and strength of riveting, &c., and not by the hydraulic test. When the boilers are in the vessel the surveyor may, at any time he thinks it necessary, before he gives a declaration, have them tested by hydraulic pressure to satisfy himself as to any doubtful part, or of places not easy of access, care being taken in the case of old boilers not to overstrain them; but the test must always exceed the working pressure.

Surveyors should also pay particular attention to the examination and testing of steam pipes.

The hydraulic test should also be applied to the boilers of all steamers that have not previously had a passenger certificate before a declaration is granted for them.

When a vessel is partially surveyed by one surveyor, and the survey is completed and a declaration granted by another, if the surveyor who witnesses the test of the boilers by hydraulic pressure has an opportunity of examining them inside and outside after the test, such surveyor should determine the pressure to be allowed on the boilers in question, taking care to inform the makers, owners, or agents, and the surveyor who is ultimately to grant a declaration, what pressure should in his opinion be allowed on them.

The amount of the hydraulic pressure test, and the date on which it was last applied to the boilers, should be inserted in the surveyor's declarations, and recorded in the office boiler book.

Cast iron in boilers and steam pipes.

101. In all boilers in which the surveyors find that cast iron is employed in such a manner as to be subject to the pressure of steam or water, they are directed to report the circumstance to the Board of Trade, in order that they may receive instructions how to act. Cast iron must not be used for stays, and surveyors should also discourage the use of cast iron for chocks and saddles for boilers. Particular attention should be paid to chocking boilers, more especially when they are fired athwartships.

Pressure fixed by one surveyor not to be increased by another.

102. A pressure once allowed on the boiler of a passenger steamship is not, *under any circumstances whatever*, to be increased unless the surveyor has previously written for and obtained the sanction of the Board. In cases where a surveyor is of opinion that an increased pressure may with safety be allowed, he should communicate with the surveyor who last surveyed the vessel; and if, on learning the reasons why the existing pressure was formerly allowed, the surveyor is still of opinion that it may be increased he should communicate all the facts of the case to the Board of Trade; but, as above stated, the pressure should not in any case be increased until the question has been decided by them.

Safety Valves.

Provisions of the Act as regards safety valves.

103. The provisions of the Act relating to safety valves are in substance as follows: Every steamship of which a survey is required by the Act shall be provided with a safety valve upon each boiler so constructed as to be out of the control of the engineer when the steam is up, and if such valve is in addition to the ordinary valve it shall be so constructed as to have an area not less, and a pressure not greater, than the area of and pressure on that valve.

If any person places an undue weight on the safety valve of *any* steamship, or in the case of steamships surveyed under the Act increases such weight beyond the limits fixed by the engineer surveyor, he shall, in addition to any other liabilities he may incur by so doing, incur a penalty not exceeding 100 *l.*

The engineer surveyor shall declare amongst other things the limits of the weight to be placed in the safety valves; that the safety valves are such and in such condition as required by the Act, and that the machinery is sufficient for the service for the time he fixes, and is in good condition for that time.

Area of safety valves, half square inch to each foot of grate surface.

104. The practice has been to provide half a square inch of area of safety valve for each square foot of grate surface. This rule appears to have worked well; and so long as that proportion of area to grate surface is maintained, it is a matter of indifference whether it be comprised in one valve or in two or more valves on the same boiler. Ordinary valves of half a square inch area to the foot of grate surface can be left without lock and key; provided that the valve required by the Act to be locked up is of the same area and is loaded to a like pressure; but if the whole proportion of half an inch to the foot be distributed over two or more valves, and if they are all placed under lock and key, there will be no necessity to require an equal area in unlocked valves.

If, therefore, the full proportion of half a square inch of area of valve to each square foot of grate surface is placed under lock and key, the surveyor need not (except in the case of very low pressures, when, of course, the area must be larger) raise any question as to the size of the valves.

Examination of safety valves.

105. The surveyor in his examination of the machinery and boilers is particularly to direct

direct his attention to the safety-valves, and whenever he considers it necessary, he is to satisfy himself as to the pressure on the boiler by actual trial.

The surveyor is to fix the limits of the weight to be placed on the safety-valves, and the responsibility of not issuing a declaration until he is fully satisfied on the point is very grave. The law places on the surveyor the responsibility of "declaring" that the boilers are, in his judgment, sufficient with the weight he states.

The surveyor is to examine the whole of the valves, weights, and springs on every survey.

The responsibility of seeing to the efficiency of the mode by which the valves are so fitted as to be out of the control of the engineer when steam is up rests with the surveyor, as long as it is efficient, and the method adopted is approved of by the Board of Trade.

Care should be taken that the safety-valves have sufficient lift, that the waste steam pipe is sufficiently large, that each valve-box has a drain-pipe fitted at its lower part, and in the case of lever-valves, if the lever is not bushed with brass, the pins must be of brass; iron and iron working together must not be passed. Too much care cannot be devoted to seeing that there is proper lift and free means of escape of waste steam, as it is obvious that unless the lift and means for escape of waste steam are ample, the effect is the same as reducing the area of the valve or putting on an extra load.

The surveyors are, so far as in their power, to make the opinion of the Board on these points generally known to the owners of passenger steamers.

Surveyor to see valves weighted.

106. When he has determined the amount of pressure he is to see the valves weighted accordingly, and the weights or springs fixed in such a manner as to preclude the possibility of their shifting or in any way increasing the pressure. The limits of the weight on the valves will have to be inserted in the declaration, and should it at any time come to a surveyor's knowledge that the weights or the loading of the valve have been shifted or otherwise altered, or that the valve has been in any way interfered with, so as to increase the pressure, without the sanction of the Board of Trade, he is at once to report to the Board of Trade.

Springsafety-valves.

107. The Board of Trade have, under certain conditions, consented to allow spring safety-valves to be fitted to boilers of passenger steamers.

If the following conditions are complied with the surveyor need raise no question as to the substitution of spring-loaded valves for dead-weighted valves:—

(1.) That at least two separate valves are fitted to each boiler.

(2.) That the valves are of the proper size.

(3.) That the spring and valve be so cased-in that it cannot be tampered with.

(4.) That provision be made to prevent the valve flying off in case of the spring breaking.

(5.) That the requisite safety-valve area is cased-in, in the usual manner of Government valves.

(6.) That screw lifting gear be provided, to ease all the valves if necessary, when steam is up.

(7.) That the size of the steel of which the spring is made is to be found by the following formulæ:

$$\sqrt[3]{\frac{s \times D}{c}} = d.$$

s = The load on the spring in lbs.

D = The diameter of the spring (from centre to centre of wire) in inches.

d = The diameter or side of square of the wire in inches.

c = 8,000 for round steel.

c = 11,000 for square steel.

(8.) That the springs be protected from the steam and impurities issuing from the valves.

(9.) That when valves are loaded by direct springs, that the compressing screw abuts against a metal stop or washer, when the load sanctioned by the surveyor is on the valve.

In no case is the surveyor to give a declaration for a spring-loaded valve unless he has first fully mastered the details of its construction, and unless he has tried it under full steam and full firing for at least 20 minutes with feeds and stop-valves shut off; and if in any case the details of construction do not satisfy him, or if the accumulation of pressure exceeds 10 per cent. of the loaded pressure, he should not give his declaration without first reporting the case to the Board of Trade, accompanied by a sketch and full particulars of the trial and of the *strength* pressure of the boilers. In the case of valves of which the principle and details have already been passed by the Board of Trade, the surveyor need not require plans to be submitted so long as the details are unaltered, of which he must fully satisfy himself; but in any new arrangement of valve, or in any case in which any detail of an approved valve is altered, he should, before assuming the grave responsibility of passing it, report particulars, with a drawing to scale, to the Board of Trade. He can make this drawing himself from the actual parts of the valve fitted, but in order to save time and to facilitate the survey, the owners or makers of engines may prefer to send in

 tracings

tracings of their own before the valve is placed on the boiler. If they do this the survey can be more readily made, and delay and expense may be saved to owners, as the surveyor will not then have to spend his time and delay the ship in preparing drawings and comparing them with the valves.

In some spring valves the accumulation of pressure has reached cent. per cent., and therefore, if the surveyor had not required a trial, he would have passed valves on which there would have been a pressure on the boiler exactly double that intended by him. And in some cases in which the increase of pressure has not been great, defects that would have rendered the valve highly dangerous have been discovered on an examination of drawings.

It is quite easy for surveyors to arrange with manufacturers so that the surveyors may have the designs of valves which the manufacturers intend to use. An easy method of facilitating this matter is for the manufacturer to leave in the local surveyor's office a plan or plans of his valve or valves when once agreed to, and then afterwards to inform the surveyors that the valve fitted is according to drawing A, B, or C, as the case may be. By this means when once a design has been agreed upon and is adhered to, all subsequent questions and delays will be prevented. Where owners of ships and manufacturers are at all desirous of facilitating surveys, and where the surveyor uses discretion and tact, there will be no difficulty. The surveyor must recollect that the responsibility of issuing a declaration rests with him, and he must be careful accordingly.

Owners, masters, and engineers to see that valves are kept in proper order.

108. It is clearly the duty of the masters and engineers of vessels to see, in the intervals between the surveys, that the Government safety-valve or valves, as well as the other safety-valves and the rest of the machinery, are in proper working order. There is no provision in the Merchant Shipping Act, 1854, exempting the owner of any vessel, on the ground that she has been surveyed by the Board of Trade Surveyors, from any liability, civil or criminal, to which he would otherwise be subject. The Act of Parliament requires the Government safety-valve to be out of the control of the engineer when the steam is up; this enactment, far from implying that he is not to have access to it and to see to its working at proper intervals when the vessel is in port, rather implies the contrary; and the master should take care that the engineer has access to it for that purpose. A substantial lock that cannot be easily tampered with, and as far as possible weather-proof, should be used for locking up the safety-valve boxes.

All tests for pressure and accumulation are to be made with Board of Trade gauges.

109. In witnessing the hydraulic proof, and in witnessing all experiments for accumulation of pressure when spring safety-valves are used, the surveyors are to use the pressure gauges supplied by the Board of Trade for the purpose.

Machinery.

What machinery is to be surveyed.

110. The machinery to be surveyed comprises the engines and boilers used for propelling the vessel, and all the machinery connected therewith. The boilers of donkey engines are to be surveyed with the boilers and machinery of the vessel, when they are in any way connected with them, thus:—even when the donkey boiler is connected with the donkey engine, that is used for pumping the water into the main boiler, it is considered to be connected to the machinery and boilers used for propelling the ship. But boilers and machinery used for loading or unloading the vessel, or used exclusively for purposes unconnected with the motive power of the vessel, do not form a part of the machinery required to be surveyed by the Merchant Shipping Act of 1854.

When to be taken to pieces for examination.

111. Surveyors should, before granting declarations for any period exceeding six months, be careful when examining the machinery; (1) to have the upper brasses of all bearings taken off; (2) the shaft turned round and carefully examined; (3) the cylinder covers and junk rings lifted for examination of the pistons and cylinders; (4) the slide covers or bonnets removed for examination of the slides, and, if necessary, the slides taken out; (5) the air and circulating pump covers lifted for examination of the pump buckets and valves; (6) the covers of all feed and bilge pump valves removed for the examination of the valves; (7) all discharged valves and sea cocks taken out for examination; (8) the propeller shaft to be drawn when necessary, and it and the screw to be examined, and in all cases in which the shaft is drawn it is to be seen again after the screw is secured in its place; (9) the bridges and fire bars to be removed to permit of a thorough examination of the boilers and furnaces; (10) all cocks and valves on the boilers to be taken out and examined.

When a surveyor has seen the machinery of a new steamer in the shop before it was put together, and is satisfied with it, it will not be necessary to have it again opened up on board the ship on the first survey for examination, either by himself or another surveyor, unless in the surveyor's judgment it is necessary after the vessel has been tried under steam.

After the examination of the parts has been made as above, the machinery must be tried under steam at full pressure. It will rest with owners to determine whether or not they will have a certificate for any period exceeding six months; but if they do so determine, then the above instructions are to be complied with before a declaration is granted.

The above instructions are also to apply at least once a year to the survey of all passenger steamers, with the exception named in the next paragraph, whatever may be the period for which the declarations are given, and to carry out the whole of the above, it must be done when the vessel is in dry dock.

112. In

Surveys under the Emigration "Passengers" Acts.

112. In cases in which steamers are surveyed under the Passengers Act at the commencement of every voyage, and in which they are absent for periods of less than six months at a time, the above instructions do not apply to every survey. The usual examination each voyage is sufficient. One complete survey at least, as indicated above, should, however, be made each year.

Examination to be carefully made.

113. In the examination of the machinery and boilers the surveyor should be particularly careful, and in no case give a declaration without thoroughly satisfying himself that both the boilers and the machinery are sufficient for the service intended, and in good condition.

As regards the efficiency of engines and boilers. Foreign-going ships are not to have a declaration given them for a period less than three months, nor home-trade ships for less than one month, unless limited by docking time, without permission from the Board of Trade.

Cocks, valves, and pipes, communicating with ship's side.

114. All inlets or outlets in the bottom or side of a vessel, near to, at, or below the deep load water-line, must have cocks or valves fitted between the pipes and the ship's side or bottom; such cocks or valves must be attached to the skin of the ship, and be so arranged that they can be easily and expeditiously opened or closed at any time. The cocks, valves, and the whole length of the pipes should be accessible at any time.

With a view to the prevention of accidents to boilers through the blow-off cocks being left open after the boiler is run up, and to prevent water getting accidentally or intentionally into the ship by cocks being left open, and also to prevent the donkey engine becoming useless when used for feeding the boilers, all blow-off cocks and sea connexions are to be fitted with a guard over the plug, with a feather-way in the same, and a key on the spanner, so that the spanner cannot be taken out unless the plug or cock is closed. One cock is to be fitted to the boiler, and another cock on the skin of the ship or on the side of the Kingston valve.

In all cases where pipes are so led or placed that water can run from the boiler or the sea into the bilge, either by accidentally or intentionally leaving a cock or valve open, they should be fitted with a non-return valve and a screw not attached, but which will set the valve down in its seat when necessary. The only exception to this is the firemen's ash cock, which must have a cock or valve on the ship's side, and be above the stoke-hole plates.

The exhaust pipe for the donkey engine must not be led through the ship's side, but must be led on deck or into the main waste steam pipe; and in all cases it should have a drain-cock on it.

This will prevent water getting into the pipe when the ship is deeply laden or rolling.

Cocks or valves standing exceptional distances from the ship's plating, that is where the necks are longer than is necessary for making the joint, are not to be passed without the sanction of the Board of Trade, and one condition of their being passed is, that they must be made of brass or gun-metal, and well bracketed.

Where the feed-cock or valve is so placed and arranged that more than one boiler can be fed at the same time through this cock or valve, a non-return valve must be fitted between each boiler and this cock or valve; but it is very desirable that all feed-cocks or valves should have a non-return valve fitted between the boiler and the cock or valve.

Cast-iron stand-pipes or cocks through which hot brine has to pass must never be passed.

Declarations are not to be given for new steamers, for steamers that have not had passenger certificates before February 1871, nor for steamers that have had new boilers since February 1871, unless stop-valves are fitted between the boilers and the steam pipes.

Spare gear and stores to be carried.

115. Foreign-going steamers coming in for survey must be provided with spare gear. In the case of steamers coming in for survey under the Passengers Acts, and other steamers performing ocean voyages, no question as to gear need be raised if the following spare gear and stores are supplied. The heavier portions of this gear must have been fitted and tried in its place, and must be kept on board where access can at all times be had to it:—

1 pair of connecting rod brasses.
1 air pump, bucket, and rod, with guide.
1 circulating pump bucket and rod.
1 air pump head valve, seat, and guard.
1 set of india-rubber valves for air pumps.
1 circulating pump head valve, seat, and guard.
1 set of india-rubber valves for circulating pumps.
2 main bearing bolts and nuts.
2 connecting rod bolts and nuts.
2 piston rod bolts and nuts.
8 screw shaft coupling bolts and nuts.
1 set of piston springs.
3 sets, if of india-rubber, or 1 set, if of metal, of feed pump valves and seats.
3 sets, if of india-rubber, or 1 set, if of metal, of bilge pump valves and seats.
1 hydrometer.
Boiler tubes, 3 for each boiler.

100 iron assorted bolts, nuts, and washers, screwed, but need not be turned.
12 brass bolts and nuts, assorted, turned and fitted.
50 iron „ „ „ „ „
50 condenser tubes.
100 sets of packing for condenser tube ends, or an equivalent.
At least one spare spring of each size for escape-valves.
1 set of water-gauge glasses.
$\frac{1}{10}$ the total number of fire bars necessary.
3 plates of iron, assorted.
6 bars of iron, assorted.
1 complete set of stocks, dies, and taps, suitable for the engines.
1 smith's anvil.
1 fitter's vice.
Ratchet braces, and suitable drills.
1 copper or metal hammer.
Suitable blocks and tackling for lifting weights.
1 dozen files, assorted, and handles for the same.
1 set of drifts or expanders for boiler tubes.
1 set of safety-valve springs (if so fitted) for every four valves; if there are not four valves, then at least one set of springs must be carried.
1 screw jack.
And a set of engineer's tools suitable for the service, including hammers and chisels for vice and forge; solder and soldering-iron; sheets of tin and copper; spelter; muriatic acid, or other equivalent, &c., &c.

Size of shafting.

116. Main, and tunnel, and propeller shafts must not be passed if found to be less in diameter than that found by the following rules, without previously submitting the whole case to the Board of Trade for their consideration. It will be found that first class makers generally put in larger shafts than those found by the following formulæ:—

For compound engine, with two cylinders:

$$\text{Diameter of shaft in inches} \quad \sqrt[3]{\frac{(d^2 \times P) + (D^2 \times 15)}{f} C},$$

where d = diameter of high pressure cylinder in inches.
D = diameter of low pressure cylinder in inches.
P = boiler pressure.
C = length of crank in inches.
f = constant from following table.

For ordinary condensing engines, with two cylinders, when the pressure is not low:

$$\text{Diameter of shaft in inches} = \sqrt[3]{\frac{D^2 \times P \times 2}{f} C},$$

where D = diameter of cylinder.
P = boiler pressure.
C = length of crank in inches.
f = constant from following table.

TABLE.

Constant.	Angle between Cranks.	For Crank and Propeller Shafts.	For Tunnel Shaft.
f	90°	2468	2880
„	100°	2279	2659
„	110°	2131	2487
„	120°	2016	2352
„	130°	1926	2248
„	140°	1858	2168
„	150°	1806	2108
„	160°	1772	2068
„	170°	1752	2045
„	180°	1746	2037

117. The

117. The distilling apparatus of emigrant ships must be taken to pieces every voyage, except in the cases of steamers holding passenger certificates, which must be taken to pieces at least once every six months, or oftener, if the surveyor thinks it necessary, and the tubes or coils tested to at least twice the highest working pressure that is on the boiler from which the apparatus can be worked, and the machinery and boilers thoroughly examined, and after they are put together again they must be tested as to the quantity and quality of the water they can make.

Distilling apparatus for making fresh water:
How to be examined, and what it is to be capable of doing.

The water must be perfectly cool, pure, and fit to drink immediately it is drawn off from the filter, and on no occasion is a distilling apparatus to be passed, unless fitted with a suitable sized filter, charged with animal charcoal; the charcoal must be taken out, cleansed, or renewed every voyage, except in cases of steamers holding passenger certificates, in which case it need not be taken out, unless the surveyor thinks it necessary, oftener than every six months; but in such cases (where passenger steamers are coming frequently in for survey under the Passenger Act, and such complete examination is not made previous to each voyage) the surveyor will be held wholly responsible for the efficiency of the apparatus; but the quantity and quality of the water must be tried previous to every voyage. It therefore rests with him whether he orders them to pieces every voyage or not. The boilers must be of at least equal strength as the boilers of passenger steamers, and must have the same fittings as is necessary for them in accordance with the Board of Trade Regulations. The surveyor must satisfy himself as to the capability of the man who is to have charge of the apparatus.

118. It is advisable that the donkey engine for pumping water through the condenser be so fitted that it can be made available in case of emergency for extinguishing fire in any part of the ship, a leather hose, with suitable bends and conductors are also to be supplied.

Pump for distilling apparatus to be fitted as fire-engine.

119. The following list of tools and material must be provided for distilling apparatus:

Stores to be carried with distilling apparatus.

1 set of stoking tools.	1 slide rod for donkey pump.
1 scaling tool.	5 lbs. spun yarn.
1 spanner for boiler doors.	10 lbs. cotton waste.
1 set of fire bars, suitable for boiler.	1 deal box, with lock, complete.
1 14-inch flat bastard file.	2 gallons machinery oil.
1 14-inch half-round file.	1 can for ditto.
1 10-inch round file.	1 oil feeder.
3 file handles.	1 small bench vice.
2 hand cold chisels.	1 ratchett brace.
1 chipping hammer.	4 drills, assorted.
1 pair patent gas tongs.	1 set dies and taps suitable for the bolts.
1 soldering iron.	2 glass salinometers.
10 lbs. of solder.	1 hydrometer and pot.
2 lbs. of rosin.	1 shifting spanner.
6 gauge glasses.	1 lamp for engineer.
24 india-rubber gauge glass washers.	
30 bolts and nuts, assorted.	

And other articles that the particular distiller and boiler supplied may, in the surveyor's judgment, require.

Accidents and Damages.

120. In all cases in which a steam ship has sustained damage from any accident or other cause affecting her seaworthiness or efficiency in any part of her hull, equipments, or machinery, the surveyors of the port where the vessel may be are to go on board and ascertain the extent of the damage. In doing so they will take care not to make any change in the position or condition of things on board which would be at all likely to affect any legal evidence, should an inquiry into the case afterwards be considered necessary.

Damage to be inspected.

121. They are forthwith to send a report, together with a rough figured sketch, showing the position of all the bulkheads, and distinguishing the compartments that may have been injured, to the Board of Trade, in order that the certificate may be cancelled, if necessary. In this report they are to state whether the vessel is rendered inefficient or unseaworthy either in hull or machinery; and whether, in their opinion, the certificate should be cancelled or only temporarily withdrawn. The surveyors should be very careful that they attend to this important part of their duty.

Report to be sent to Board of Trade.

122. The surveyor should, at the same time, examine the lights and screens of the vessel, and if the vessel with which she has been in collision is within his district he should examine the lights of that vessel also, and should forward to the Board of Trade, in a separate report, a statement respecting the size, condition, and place of her lamps and screens, and whether, in his opinion, they comply with the requirements of the regulations, and if not, in what respects they are deficient.

Lights to be examined.

The surveyors should be very careful in wording their reports as to lights and screens, as they may be used in evidence in cases taken into court.

 123. If,

Surveyor may order vessel to be docked.

123. If, in consequence of any accident to a steam ship, or for any other reason, the surveyor considers it necessary to require the vessel to be taken into dock for the purpose of surveying the hull thereof, he may do so, but he is to be cautious never to exercise this power unless the circumstances of the case actually require it.

Certificate to be held during repairs.

124. Unless directions to the contrary are given by the Board of Trade, the surveyor is to hold the certificate of the vessel during the time the vessel is under repair, and for this purpose he is to require it of the master, unless the damage is such that in the surveyor's judgment the certificate should be cancelled, in which case he should forward it to the Board of Trade with his report. In all cases of serious damage the certificates should be cancelled.

Should the master or owner decline to give up the certificate, the surveyor is to send information immediately to the Board of Trade, so that, if necessary, it may be cancelled; but the surveyor is particularly directed to pay attention to the above instructions respecting reporting the whole case to the Board of Trade as soon as possible after it comes to his notice.

Certificate may be indorsed if it has not been cancelled.

125. When the vessel is in every respect rendered seaworthy and efficient, both in hull and machinery, to the entire satisfaction of the surveyor, he is to put an indorsement on the back of the certificate and duplicate if they have not previously been cancelled, to the effect that the damage has been made good so as to last for the period for which the certificate was granted, and return the certificate to the master or owner, or his agent, and allow the vessel to proceed. He is then to send to the Board of Trade a statement of the extent of the repair that was necessary, and a copy of the indorsement made on the certificate.

Penalty for not giving up cancelled certificate.

126. In all cases in which a surveyor is directed by the Board of Trade to obtain from an owner or master a certificate that has expired, or has been cancelled or revoked, he is to apply for it without delay, and in the event of his application not being attended to, he is at once to report the case. The 315th Section of the Act imposes a penalty of 10 *l.* on any owner or master who neglects or refuses to deliver up such certificate when required to do so by the Board of Trade.

Crew Space.

Introduction.

Measurement of crew space.

127. The practical instructions appended have been prepared for the guidance of surveyors in measuring the places appropriated to seamen on board merchant ships under Section 9 of the Merchant Shipping Act of 1867.

By whom to be made.

128. The duty of surveying places occupied by seamen on board ship is to be performed, if necessary, in equal proportion by all the surveyors in a port or district, whether they are shipwrights or engineers, or both, unless special directions to the contrary are given in any case.

Surveyors are not required nor expected to enter into any crew space for the purpose of inspecting it unless it is in a sufficiently clean and clear state.

Meaning of expression "ship."

129. It is well here to explain that the expression "ship" as used in the principal Act includes "every description of vessel used in navigation not propelled by oars," and that the word "seaman" includes "every person (except masters, pilots, and apprentices duly indentured and registered) employed or engaged to serve in any capacity on board any ship." Vessels exclusively employed in fishing on the coasts of the United Kingdom are exempted from provisions of Section 9 of the Act of 1867, as are also pleasure yachts and such barges as can be propelled by oars, or are exclusively employed upon canals and rivers.

Cubic content, height, and floor area of crew spaces.

130. The Act of 1867 (Section 9) provides that every place in any ship occupied by seamen or apprentices, and appropriated to their use, "shall contain a certain cubical space (72 cubic feet) and a certain superficial surface (12 feet) for each seaman." This place must be such as to make the space required by the Act available for the proper accommodation of the men who are to occupy it, and must be securely constructed, properly lighted and ventilated, properly protected from weather and sea, and as far as possible shut off and protected from effluvium which may be caused by bilge water and cargo.

To be deducted from tonnage in certain cases.

131. Under the Merchant Shipping Act, 1854, the tonnage of crew spaces situated above the upper deck was, to the extent of one-twentieth of the remaining tonnage, excluded from the gross tonnage of the ship. The Merchant Shipping Act, 1867, however, makes no restriction on either of these points. The tonnage of all the places for the berthing of seamen and apprentices, and appropriated to their use, whether situated above or below the upper deck, and whether under or above one-twentieth of the tonnage, may now be deducted from the register tonnage of the ship, provided that the surveyor certifies that the provisions of the Act in regard to such places are complied with.

Certain provisions of the Act apply when tonnage of crew

132. Full directions respecting the mode of measurement of the places appropriated to the use of seamen will be found in detail below (paragraphs 11 to 25 of practical instructions). It is only necessary here to point out that every place in any ship (with the exceptions

exceptions named in paragraph 3 above), whether exemption is claimed or not from the register tonnage, must be of the size and construction named in the Act, and referred to above. It is important that this should be understood at the outset, as otherwise it might appear that if an owner does not wish to claim any deduction from the register tonnage of his ship, on account of crew spaces, the crew spaces of that ship need not be of the size and construction named in the Act. The surveyor should therefore explain to shipowners and masters and others that, whether a deduction is or is not claimed, the provisions of the Act (Section 9, paragraphs 1 and 2) must be complied with in all ships (with the exceptions named in paragraph 3 above) without reference to their size or construction, or to the nature of the employment or voyage on which they may be engaged. It is only, however, in cases in which an owner wishes to register or re-register his vessel, or wishes to obtain an allowance from tonnage, that an inspection by a surveyor is necessary.

space is not deducted from gross register tonnage.

133. Every place in any ship appropriated to the use of seamen or apprentices, and whether deducted from the register tonnage or not, must be kept free from stores and goods of any kind, not being the personal property of the crew (Section 9, paragraph 6), and if such place is not kept free from goods and stores, any two seamen have power to complain to the master, and if the goods and stores are not removed, then the master is deemed to be in fault, and each seaman is entitled to a shilling a day during the time which such goods or stores remain therein.

Crew space, whether deducted from tonnage or not, to be kept free from stores and cargo. Penalty.

134. If the other provisions of the Act (*i.e.*, size, construction, ventilation, lighting, &c.) are not complied with, then the owner is to be deemed to be in fault, and the penalty for every failure to comply with the Act is 20 *l.*

Ventilation, &c. Penalty.

135. Upon the complaint of any person concerning the place appropriated to the accommodation and berthing of the crew of any ship, one of the surveyors appointed under Part IV. of the principal Act is required to inspect the place, and to make his report to the collector of customs of the port. It will then be for the collector to take such steps as are required of him by the Act. Full instructions on this point are given in the practical instructions following this.

Complaints as to using crew spaces improperly.

Upon a written complaint being made to the surveyor that the provisions of the Act are not complied with as regards the crew-space accommodation on board any vessel which has been inspected and certified, the surveyor will, as soon as possible, proceed on board the vessel, and if he finds that the provisions of the Act are not complied with, he will report the same to the collector of customs at the port where the vessel is registered, and thereupon the deduction in respect of the crew space shall be disallowed. The form of the report to be used in this case is (Survey 62).

136. If the owner of a ship wishes to claim a deduction from the register tonnage of his ship on account of any places provided for the accommodation of seamen and apprentices, and solely appropriated to their use, he must prove that the provisions of the Act as to cubic and superficial space, fitting, lighting, ventilating, &c., referred to above, are complied with, and the number of seamen the place is certified to accommodate must be cut in a beam, and cut in or painted on or over the doorway or hatchway of the place. In addition he must provide one or more permanently fixed privy or privies (for the use of the crew) of such construction as may be approved by the surveyor.

Regulations to be complied with on claiming deduction.

137. Except in cases in which a deduction has been allowed and is afterwards found to be not in accordance with the Act, or not solely appropriated to the use of the crew, the Board of Trade Surveyor need not interfere unless (*a*) he is called on to do so by the collector of customs, or by the superintendent of a mercantile marine office, or by the owner or master, or any of the crew of the ship, or unless (*b*) he is directed by minute or letter from the Board of Trade.

Interference of Board of Trade Surveyor therefrom.

138. It is to be distinctly understood and explained that the Merchant Shipping Act of 1867 is not an enactment intended to regulate or interfere with the manning of merchant ships. It is not for the surveyor to say how many men ought to be accommodated on board any particular ship or any particular classes of ships. That is a matter to be arranged entirely between the owner as an employer, and the crew as the persons he employs to navigate and work his ship.

Amount of space set apart to be settled by owner.

139. This point cannot be too clearly understood. On the one hand it is incumbent on the shipowner to man his ship properly, and on the other it is left to any seaman to refuse to engage to serve on board a ship, if he thinks that the number of hands proposed to be engaged by the owner or master to form the crew is not sufficient for the ship or service. The proper complement to form a crew, and therefore the proper amount of accommodation to be provided for the crew, are matters that must rest between and be settled by the owner and his servants; and with these points the Legislature has not interfered and the surveyors have nothing to do.

Owner alone to say how many seamen the ship is to carry.

140. It is not in the power of the owner to say to the seamen "The licensed accommodation for seamen on board this ship is for so many seamen only, and that number is the number settled by the Government as the proper number to form the crew of this ship." The Government has nothing whatever to do with it, as has been already explained.

Tonnage of space deducted not to settle number of hands to be carried.

The surveyors must be careful that they do not authorise a deduction from tonnage for any

any place that does not come within the meaning of the Act as crew's space. Whenever a surveyor has any doubt as to whether or not the place which he is called upon to inspect, and for which a deduction from tonnage is sought, is not only a place available for the proper accommodation of, but will be actually occupied by and appropriated for the use of, the crew within the meaning of the Act, or is in any difficulty with regard to the amount of space which he should include in his measurements, he will, without delay, submit the facts of the case to the Board of Trade. If a difference of opinion upon any of the matters mentioned in the 9th section of the Act or in these instructions should arise between the surveyor and the owner, agent, master, or builder from whom he received the application, and such difference of opinion should appear likely to result in a refusal to do what the surveyor may require, the surveyor will at once forward to the Assistant Secretary, Marine Department, Board of Trade, London, a clear and concise statement of the facts of the case, together with all the correspondence which has passed on the subject, and a sketch, with figured dimensions, of the place in dispute.

Lighting, ventilation, &c.

141. The surveyor will see that every place on board any ship that he may be called on to survey is properly provided, constructed, and fitted in accordance with the Act, but he will in no case express an opinion whether the number of seamen and apprentices for whom accommodation is provided is or is not a sufficient crew for the ship.

The surveyors are to send in to the applicants for the crew space inspection of any vessel a report after each inspection, stating their requirements, and giving their expenses in detail on the proper form; if this is neglected misunderstandings are sure sooner or later to arise, and the Board of Trade will not be able to refund to the surveyor his expenses (if any) incurred on such inspection.

Full compliance with the provisions of the Act. when not necessary.

142. A question has been raised whether the registry or re-registry of a ship is subject to full compliance by the owners with Section 9 of the "Merchant Shipping Act, 1867," or whether a registrar of shipping would be authorised to refuse to register a vessel if the Board of Trade surveyor, after inspection, should grant a certificate that he had inspected the crew spaces, and that the provisions of the Act are not complied with. The following explanation will probably make this point clear, viz.:

(*a.*) Every place in any ship occupied by seamen or apprentices and appropriated to their use shall, under the Act of 1867, "whenever the ship is registered or re-registered, be inspected by one of the surveyors appointed by the Board of Trade under Part IV. of the principal Act."

(*b.*) No ship (except she be a vessel employed exclusively in fishing on the coast of the United Kingdom, a pleasure yacht, or barge employed on a river) can, therefore, be registered or re-registered in the United Kingdom until the crew spaces have been inspected by such surveyor.

(*c.*) If the inspection is satisfactory, and if the privies are provided, and the words "certified to accommodate ( ) seamen" (stating the number of men which can be accommodated) are permanently cut in a beam, and cut in or painted over or on the doorway or hatchway of the crew spaces, the surveyor will grant his certificate authorising a deduction, and the ship must be registered with that deduction.

(*d.*) If the result of the inspection is not satisfactory, the surveyor cannot give his certificate that the Act is complied with, but the ship can be registered without any allowance on account of crew spaces, provided that the surveyor gives a certificate that he has inspected the crew spaces.

(*e.*) Whether the allowance is or is not certified for and granted, the provisions of the Act as regards the crew spaces must be complied with (except paragraphs 3 and 9 of Section 9, when the deductions are not allowed), and the owners and master are liable to penalties for default.

(*f.*) No part of a space that is used by the master and an officer is to be allowed as crew space unless such space, which must be that appropriated for the officer's use, is properly and substantially partitioned off from that part appropriated for the master's use.

(*g.*) Galleys, wherever situated, are not to be deducted as crew space; but if the crew spaces and galley are contiguous, the bulkhead must be doubled, with felt between the doubling and the bulkhead.

Crew space of foreign ships.

143. The tonnage of foreign ships trading to this country has frequently to be ascertained under Rules 1 and 2 of the Merchant Shipping Act, 1854. When surveyors are called in to inspect the crew spaces of foreign ships, they should proceed in the same manner as with British ships.

To the strength and security of the place in which the seamen are berthed.

144. Upper and lower forecastles which form part of the original and permanent structure of the vessel will in most cases be found to be sufficiently strong and secure, and the surveyor will only have to search for defects resulting from decay or accident; but when the seamen are berthed in a deck-house, or in a forecastle which has been raised upon or added to the original structure of the vessel, it will be necessary to examine carefully the mode in which such deck-house or forecastle is built, fitted, and secured, and also to ascertain that it is sufficiently strong to withstand the force of heavy seas which may strike upon

upon or against it. This examination of the strength and security of deck houses will be especially necessary in the case of the smaller class of sailing vessels.

145. Under this head the surveyor should see that the sides, ends, floor, and top of the spaces appropriated to seamen and apprentices are properly caulked. It will be found beneficial, when the ceiling is caulked, to have air pipes leading up to the upper or weather deck, but such openings should be so fitted that they can be closed and made watertight in cases of necessity. That the side ports or scuttles are properly fitted and in good condition, and that there is no leakage from the deck or water-way seams, or from around the bowsprit, knightheads, catheads, or cattails, fish davits, bulwark stanchions, paulbitt, windlass bitts, or capstan spindle. He should also see that the entrance to lower forecastles is properly protected by a strong companion or booby hatch, built or fitted and secured upon coamings of sufficient height and strength, and that at the entrance to upper or top-gallant forecastles there is a sufficiently deep and strong cant or coaming and a strong athwartship bulkhead. If the hawse holes are in the crew space, the surveyor should see that properly fitted hawse plugs and hawse bags are provided, or that, by hawse bucklers or slides, or tubes leading from the windlass to the hawse holes, or a manger or other contrivance, water will, as far as practicable, be prevented from entering the crew space through the hawse holes when the cables are unbent, or when the vessel is riding at anchor. When the cables lead down from the deck into a lower forecastle, the surveyor should see that there is a proper casing around the cables, or that the pipes through which they lead are fitted with hoods or covers, to prevent water from the deck finding its way below, or effluvium from the chain locker coming up from below.

To the seaworthiness and sufficiency of the crew space.

146. In upper or top-gallant forecastles and in deck-houses there will be little difficulty in affording a sufficient amount of light, either by side ports or skylights, and the surveyor will determine whether such places are properly lighted; but in lower forecastles there may be some difficulty. The arrangements of the deck overhead may not perhaps admit of the fitting of a skylight, and the vessel may have such a shallow side out of the water that it would not be prudent to have side ports or scuttles fitted. Under these circumstances the surveyor will consider whether sufficient light may not be admitted through glass prisms or bull's eyes let into the deck, and he will so exercise his knowledge and judgment that a proper amount of light will be admitted without unduly interfering with the deckwork or arrangements of the vessel. A good guide as to the sufficiency of light is that ordinary print may be read in any part of the crew space.

To the means for affording light.

147. The surveyor will have to decide whether the place occupied by the crew is properly ventilated. The simplest method is to have an iron pipe with a revolving cowl, which in lower forecastles must be as high as the bulwarks, fitted at each end or side of the crew space, so that while impure air escapes at one, pure and fresh air will enter at the other, and a constant circulation be kept up. Where such means for ventilation is adopted, one of the ventilators should pass through the deck to at least the lower side of the beams. These pipes may be fitted to unship, and caps be fitted over the holes, when the forecastle is being worked. Mushroom ventilators may be fitted for ventilating deck-houses, but must not be fitted to forecastles, unless they are at least 30″ high for top-gollant forecastles, but if fitted to lower forecastles they should be at least as high as the bulwarks. Mushrooms should be discouraged in every case excepting deck-houses, and although the surveyor will not insist on any particular plan, he must take care to see that the requirements of the Act regarding ventilation is complied with. Scuttles, companions, and doors are not to be considered as efficient means of ventilating crew spaces. There must always be two ventilators in forecastles and deck-houses, and in lower forecastles they should always come at least to the upper side of the rail. Where a top-gallant forecastle is divided by two fore and aft bulkheads, with an open space between them, and where the cowl ventilators are objected to and cannot be conveniently fitted, two mushroom ventilators, of sufficient height, may be fitted, placed a few feet abaft the breast beam, each ventilator being a short distance on each side of the centre line of the ship. Openings of sufficient size must be made in the top and bottom of the bulkheads, covered with finely perforated zinc, or other material, and fitted with slides, or small hinged doors at the top, opening inwards, and so arranged that they can be opened or shut at any time, and fitted with suitable fastenings. If the entrances to the crew's spaces are not in the open passage, jalousies or other ventilating openings, with slides to close them, must be fitted in the doors.

Privies should be ventilated in a suitable manner, but it will not always be necessary to fit cowls or mushrooms.

Ventilation.

148. The Act does not specify that the space occupied by the crew shall be of any particular height, but it provides that "every such place shall be such as to make the "place available for the proper accommodation of the men who are to occupy it;" and it also provides for a minimum amount of cubic capacity, as well as a minimum amount of floor space, per man. In construing the words "available for the proper accommodation," the surveyor will determine whether the place which he is called upon to inspect is of sufficient height for men of ordinary stature to stand and move about in in an upright position, that is to say, at least 5 feet 6 inches between the floor and the under side of the beams, and also of such height, that if the sleeping bunks are built in two tiers, the bottom of the lower tier will be about 12 inches from the floor, and the bottom of the upper tier at a sufficient distance from the bottom of the lower tier as well as from the deck overhead. The bottom of any bunk must not be less than about 12 inches from the floor. In any

Height.

case in which there is any difficulty in this respect, the surveyor should report by letter to the Assistant Secretary.

Drainage.

149. The surveyor will see that there are holes, sufficient in number and size, through the cant or coaming of upper forecastles and deck-houses to admit of a ready escape of water, and that there are plugs with lanyards or chains attached fitted to each hole, and that in lower forecastles the scuppers are of such size and are so situated that any water may be readily drained off. Where such drainage passes through a privy or other compartment, it will be necessary to have a pipe for the drainage to pass through such privy or compartment with the ends made perfectly tight through the cant or coaming of the forecastle. In many cases it will be found that lower forecastles have simply a hole bored through the floor in each after corner, and that filth is allowed to drain through these holes, to adhere to and accumulate upon the timbers, planking, and ceiling, and to become stagnant amongst the chain cables, coals, or stores which may be stored below. This should not be allowed. There should be proper scuppers or pipes leading from the floor of the forecastle to the limbers, so that the drainage may be readily pumped out by the ship's pumps. These scuppers or pipes should be of such size and should be so arranged that, with ordinary care, they will not become choked, and should be so fitted that they can be easily cleared, and the effluvium arising from the cargo or bilge water will not escape from them into the place occupied by the seamen. They should be properly and efficiently trapped.* In cabins off the saloon appropriated to the officers or seamen (however, it is seldom that seamen will be berthed off the saloon; when such is said to be the case, the surveyor should satisfy himself of the truth of it before he grants deduction, or refer the matter to the Board of Trade), and so situated, arranged, and protected that water will not find its way into them from the deck or ship's side, it will not be necessary to insist on scuppers or drain pipes; but if the place is to be appropriated to any other than the engineers, mates, carpenter, or boatswain, or steward, drainage similar to lower forecastles must be insisted upon.

Protection of the crew space from effluvia arising from cargo or bilge water.

150. The Act requires that every place occupied by seamen shall, as far as practicable, be properly shut off and protected from effluvium which may be caused by cargo or bilge water; the surveyor must, therefore, see that the bulkheads, sides, and decks of the crew spaces are so fitted, laid, and caulked, and are of such thickness that this provision of the Act is complied with. Scuttles or hatchways opening into a storeroom underneath the forecastle may be permitted, provided such scuttles or hatchways are properly fitted, and means provided for screwing down on indiarubber or other suitable soft and elastic substance, so that the store-room or hold underneath is properly shut off from the forecastle. The bulkheads besides being tongued and grooved, should be doubled with felt between, or battened over the seams with felt under the battens.

Privy accommodation.

151. It will be the duty of the surveyor to see that the privy accommodation is as required by the Act in the cases to which this provision of the Act applies, viz., those in which a deduction from tonnage is sought. In small vessels with low bulwarks, it may be difficult to arrange an inclosed privy, such as may be easily fitted in larger vessels; but still a strong seat with a shoot or pan passing over or through the ship's side may be fitted, and this may be protected from the weather by a fixed or folding wooden or iron hood, with suitable flaps or doors to inclose the space when occupied. The surveyor should see that the privies are so built, fitted, and situated that no unpleasant smell from them will enter the place occupied by the crew; that the seat and pan are securely fixed, and that the scupper or shoot is so made, fitted, placed, and secured, and is in such condition that it will efficiently answer the purpose for which it is intended. If the spaces are certified for 20 men, there should be two privies, or one double one, and so on in proportion to the number certified for.

List of defects to be sent to owners.

152. After the surveyor has inspected the place appropriated to the seamen and apprentices, and has made a note of any defects which may require to be remedied or any alterations or additions which require to be made, he will send a list of the same to the owners, agent, master, or builder on Survey 70. On receiving back the Survey 70 in the regular manner, he will inspect the vessel again, and if all defects are made good he will proceed to measure the spaces according to the following rules.

Rule for computing the superficial area of the deck or floor.

153. The place being first sufficiently cleared and clean, and in a fit state for measurement, measure the length in a straight line from the foremost boundary of the floor of the crew space (whether such foremost boundary be the stem, or knightheads, or waterway, or breast-hook, or a bulkhead, or that part of the floor beyond which men cannot properly stand or move about) to the aftermost boundary of the floor of the crew space. Divide the length so taken into four equal parts. At each of these points of division, and at the foremost and aftermost boundaries of the crew space, take a breadth across the ship, between the boundaries of the side as defined before; number the breadths so taken as Nos. 1, 2, 3, 4, 5, commencing with No. 1 as the foremost boundary and ending with No. 5 as the aftermost boundary. Multiply the first and last breadths by one, the second and fourth breadths by four, and the third breadth by two. Then multiply the sum of these products by one-third of the distance or common interval between the breadths, and the product

* *See* Appendix C.

product will be the gross area of the floor of the crew space. From this gross area deduct the gross area of all incumbrances, such as hatchways, chain pipes, ventilating trunks, windlass, riding bitts, &c., and the remainder will be the clear area of the floor. Divide this clear area by 12, and the quotient will be the number of seamen for which the space is to be certified, provided that the cubic capacity of the space (as afterwards computed) is sufficient for such number of men at 72 cubic feet per man. The measurements are to be taken in feet and tenths of a foot. Bed bunks or sleeping berths are not to be deducted as incumbrances, but in cabins there should not be less than 12 square feet per man exclusive of the bunk, as the spirit of the Act is that each man should have 12 clear superficial feet of deck space.

Spaces that are not "available" are not to be included in "crew space."

154. Such parts of the space as are not "available for the proper accommodation of the men who are to occupy it" are not to be included in the measurement (he should never measure until all defects or alterations are made good), such for instance as the narrow triangular spaces at the forward extremity of the lower forecastles of vessels with very sharp or hollow bows, or the recessed spaces under ladder ways, or spaces similar to those marked "stores" on the plan No. 2, Appendix B., which being too narrow and confined for men to stand or move about in have been bulkheaded off and appropriated for the stowage of small stores, if intended for such purposes, the stores not being the personal property of the crew. He must not measure past the inner side of gutter waterways, or inner edge of raised covering board, or, if the sides tumble home past the greatest tumble home of the ship's side, unless the deck beams are more than 5 ft. 6 ins. above the floor, then a line taken from a point at the side of the ship 5 ft. 6 ins. from the floor, and let fall perpendicularly on to the floor, the point where it touches the floor will be the outer part of the floor space.

Rule for computing the cubic capacity.

155. Multiply the clear area of the floor space by the height from deck to deck at the middle line; the product will be the cubic capacity of the crew space. Divide the cubic capacity thus obtained by 72, and the quotient will be the number of men the place is to be certified to accommodate, provided that there is sufficient area of deck, as before computed, for such number of men at 12 superficial feet per man.

It will thus be seen that the smallest of the quotients obtained by the two calculations will be the number for which the place measured is to be certified.

Plans and calculations to illustrate the above rules are given in Appendix B. annexed.

The area and capacity of rectangular deck-houses and cabins may be computed by multiplying together their principal dimensions.

The rank or grade of the persons who occupy spaces which have been allowed as crew space must be inserted in Stm. 25.

Petty officers' places.

156. If the petty officers and apprentices are berthed in a place distinct from the crew, the surveyor will inspect and measure the space, and enter its dimensions in the book (Form Survey 64) supplied for the purpose. The surveyor will also, if the owner wishes it, inspect every cabin or place occupied by the officers, or by any person coming within the legal definition of "seamen" (for which *see* para. 3 of introduction), and if the place is constructed and fitted in all respects as required by the Act he will measure it, and enter its dimensions under its proper designation on the Form Survey 63.

Firemen's places.

157. If the firemen and coal trimmers are berthed in the same part of the vessel as that in which the crew are berthed, the surveyor will inspect and measure the space which they occupy, and he will, if the owner wishes it, do the same when they are berthed in a distinct compartment away from the engine-room, or in cabins leading out of the engine-room which have not been included by the surveyor in the "allowance for propelling power;" but if the cabins leading out of the engine-room have been included in the "allowance for propelling power," the surveyor will not measure them for crew space allowance under the Act of 1867.

Form Surveys 64, to be kept by Surveyor.

158. The measurements and calculations are to be recorded by the surveyor on an inspection form (Survey 64). The surveyor will retain his own measurements and calculations, but will forward a summary of them on Survey 63 for each vessel inspected, and from the registered tonnage of which a deduction for crew's space is allowed, to the Principal Surveyor of Tonnage, St. Katharine Dock House, Tower Hill.

Form Surveys 63, to be sent to Principal Surveyor of Tonnage.

159. All the forms Survey 63 are to be sent to the office of Principal Surveyor of Tonnage for the calculations to be checked. The Principal Surveyor of Tonnage, when he has checked the calculations, will hand over the forms Survey 63 to the Chief Surveyor, in order that any practical questions relating to construction, fitting, ventilation, &c. may be attended to. A copy of Survey 63 must be kept in the office book supplied for the purpose. Any information the Principal Surveyor for Tonnage may require regarding the forms must be immediately supplied by the surveyor; also any information required or directions given by the Chief Surveyor must have immediate attention.

Crew spaces that are inspected for the purpose of enabling the owner to obtain registry or re-registry need not be reported to the Board of Trade on Survey 63, but whether expenses have been incurred or not, the proper form stating in what respects the Act has not been complied with must be forwarded to the Board of Trade immediately on its receipt from the Superintendent of the Mercantile Marine Office; a surveyor's rotation

number should, however, be attached to each vessel so inspected. The rotation number is to be the surveyor's and not that of the office or port.

Notice of alterations to be given by Surveyor, Form Surveys 70.

160. If the surveyor should require any defects to be remedied, or any additions or alterations to be made, he will give to the owner, agent, master, or builder from whom he received the application a written statement on Survey 70, clearly setting forth the nature and extent of his requirements, and must not give the numbers to be certified for until all additions or alterations are made. When all defects are made good he should send another Survey 70, stating the numbers to be cut in the beam and cut in or painted over the entrance to each place.

When expenses are to be charged to owner.

161. If, on first visiting a ship for the purpose of inspecting the crew space, the surveyor is able to give his certificate, the owner will not be called on to pay any expenses; but if the surveyor is required to visit the ship *more than once before he can give his certificate, or if the owner does not intend to claim any deduction* on account of crew spaces, then the whole of the expenses should be charged on the owner, *and must be paid before* the surveyor gives his certificate for registry. Division A. of one of these forms is to be filled up by the surveyor and sent to the owner after each inspection, so long as alterations or additions are required.

Surveyor to give certificate to Registrar.

162. If the surveyor is satisfied that the places appropriated to or occupied by persons coming within the legal definition of "seamen" are in all respects such as are required by the Act, and if the number of seamen which can by his measurement and calculation be accommodated in each of such places is permanently cut in a beam or cut in or painted on or over the doorway or hatchway of every such space, he will give to the collector of customs at the port where the vessel is registered a certificate to that effect, and thereupon the aggregate tonnage of such spaces, being the quotient obtained by dividing the total cubic capacity by 100, shall be deducted by the collector or registrar from the register tonnage.

Certain spaces not included in tonnage are not now to be deducted.

163. The surveyors will bear in mind that all crew spaces situated above the upper deck of vessels measured under the Act of 1854, and registered before the Act of 1867 came into operation, were (to the extent of one-twentieth of the vessel's remaining tonnage) excluded from the register tonnage, and they will be careful not to give the certificate Survey 61 authorising an allowance to be granted for spaces which have never been included in the vessel's tonnage. With a view to prevent such allowances being obtained, the Commissioners of Customs have, with the approval of the Board of Trade, given instructions to the registrars of shipping to the effect that before any deduction on account of crew spaces situated above the upper deck is made from a vessel's tonnage, such crew spaces are in the first instance to be measured by the surveyor, and included in or added to the existing tonnage.

If owner does not wish for a deduction, surveyor is still to send a report.

164. It may happen that a shipowner, for reasons of his own, does not wish to claim any deduction from the register tonnage of his ship on account of the spaces occupied by the "seamen" on board his ship. In such a case paragraphs 3 and 9 of Section 9 of the Act of 1867 need not be complied with, and the surveyor should after inspection as usual fill up Division A. of the special Form Survey 70, and send it to the owners. On the Form Survey 70 being returned to the surveyor by the Superintendent of the Mercantile Marine Office the surveyor should issue his certificate Form Survey 62. This form (Survey 62) will be sent to the Collector of Customs and Registrar of Shipping in the same manner as a certificate of compliance (Survey 61) is now sent, and the report made to the Board of Trade in Form Survey 70 will show in what respect the Act is not complied with. It will rest with the Board of Trade to institute proceedings for the recovery of the penalties in any case they may think fit.

How deduction is to be computed.

165. The tonnage allowance on account of crew space to be returned by the surveyor to the Collector of Customs on Form Survey 61 is to be computed by the following rules:—

(*a.*) First. When the seamen and apprentices are berthed in a lower forecastle or in a forecastle permanently closed in above the upper deck, the tonnage allowance for the space solely appropriated to their use shall be ascertained as follows:—Measure the internal mean length of such space in feet and divide it into two equal parts. Measure at the middle of its height three inside breadths, namely, one at each end and the other at the middle of the length; then to the sum of the end breadths add four times the middle breadth. Multiply the whole sum by one-third of the common interval between the breadths. The product will be the mean horizontal area of such space. Multiply this mean horizontal area by the mean height from deck to deck. Divide the product by 100, and the quotient shall be deemed to be the tonnage allowance for such space.

(*b.*) When the seamen and apprentices are berthed in a deck-house or in cabins the tonnage allowance for the space solely appropriated to their use shall be ascertained by the following rule:—Multiply together the mean length, breadth, and height of each of such spaces; divide each product by 100, and the quotient shall be deemed to be the tonnage allowance for each of such spaces, but in measuring cabins for crew space accommodation the actual floor must be measured.

166. The

166. The aggregate tonnage (computed as above) of all the spaces solely appropriated to the use of seamen and apprentices is the amount of tonnage allowance to be returned by the surveyor to the Collector of Customs on Survey 61, which must also state the number of cubic metres in the number of tons allowed. (Tons × 2·83 = cubic metres.) Amount of deduction.

In computing the tonnage allowance by either of the above rules no deduction need be made for chain pipes, winches, and other incumbrances which occupy spaces not available for cargo or stores.

167. It is left to the owner's option whether the number a crew's space will accommodate is cut in, or whether it is painted on or over the door or hatchway leading to such space, but it must be cut in the beam in the inside of such crew's space. In the cases of deck-houses, if the beams are cased, the cutting in of the necessary words on the beam casing may be accepted instead of in the beam itself, Properly and efficiently constructed waterclosets below the upper deck, if solely appropriated for the use of the crew, may be treated as crew space, and their capacity deducted from the register tonnage of the vessel. Number of crew certified for to be cut in or painted on crew space.

168. Memorandum forms of inspection (Survey 64) have been prepared for the use of surveyors. These forms may be obtained in the same manner as other survey forms from the Superintendent of the Mercantile Marine Office at the port, and the surveyor must be prepared to produce them, properly filled up, whenever required to do so by the Board of Trade. Form Surveys 64.

Appendix (A).

MERCHANT SHIPPING ACT, 1867.

Cap. CXXIV.

An Act to amend the Merchant Shipping Act, 1854. [20th August 1867.]

BE it enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

1. This Act may be cited as The Merchant Shipping Act, 1867, and shall be construed with and as part of The Merchant Shipping Act, 1854, hereinafter termed the Principal Act.

2. This Act shall come into operation on the First day of January One thousand eight hundred and sixty-eight, but shall not apply to any ship which belongs to the United Kingdom and is absent therefrom at the time when this Act comes into operation until such ship has returned to the United Kingdom.

3. The Two hundred and twenty-fourth, Two hundred and twenty-seventh, and Two hundred and thirty-first Sections of the Principal Act are hereby repealed.

4. The following Rules shall be observed with respect to medicines, medical stores, and anti-scorbutics (that is to say),—

(1.) The Board of Trade shall from time to time issue and cause to be published scales of medicines and medical stores suitable for different ships and voyages, and shall also prepare or sanction a book or books containing instructions for dispensing the same:

(2.) The owners of every ship navigating between the United Kingdom and any place out of the same shall provide and cause to be kept on board such ship a supply of medicines and medical stores in accordance with the scale appropriate to the said ship, and also a copy of the said book or of one of the said books containing instructions:

(3.) No lime or lemon juice shall be deemed fit and proper to be taken on board any such ship, for the use of the crew or passengers thereof, unless the same has been obtained from a bonded warehouse for and to be shipped as stores; and no lime or lemon juice shall be so obtained or delivered from any warehouse as aforesaid unless the same is shown, by a certificate under the hand of an inspector appointed by the Board of Trade, to be proper for use on board ship, such certificate to be given upon inspection of a sample after deposit of the said lime or lemon juice in the warehouse; nor unless the same contains fifteen per centum of proper and palatable proof spirits, to be approved by such inspector, or by the proper officer of Customs, and to be added before or immediately after the inspection thereof; nor unless the same is packed in such bottles, at such time and in such manner, and is labelled in such manner, as the Commissioners of Customs may direct; provided that when any such lime or lemon juice is deposited in any bonded warehouse, and has been approved as aforesaid by the said inspector, the said spirits, or so much of the said spirits as is necessary to make up fifteen per centum, may be added in such warehouse, without payment of any duty thereon; and when any spirit has been added to any lime or lemon juice, and the same has been labelled as aforesaid, it shall be deposited in the warehouse for delivery as ship's stores only, upon such terms and subject to such regulations of the Commissioners of Customs as are applicable to the delivery of ship's stores from the warehouse:

(4.) The master or owner of every such foreign-going ship (except those bound to European ports or to ports in the Mediterranean Sea, and also except such ships or classes of ships bound to ports on the eastern coast of America north of the thirty-fifth degree of north latitude, and to any islands or places in the Atlantic Ocean north of the same limit, as the Board of Trade may from time to time exempt from this enactment) shall provide and cause to be kept on board such ship a sufficient quantity of lime or lemon juice from the warehouse duly labelled as aforesaid, such labels to remain intact until twenty-four hours at least after such ship shall have left her port of departure on her foreign voyage, or a sufficient quantity of such other anti-scorbutics, if any, of such quality, and composed of such materials,

rials, and packed and kept in such manner, as Her Majesty by Order in Council may from time to time direct:

(5.) The master of every such ship as last aforesaid shall serve or cause to be served out the lime or lemon juice with sugar (such sugar to be in addition to any sugar required by the Articles) or other such anti-scorbutics as aforesaid to the crew so soon as they have been at sea for ten days, and during the remainder of the voyage, except during such time as they are in harbour and are there supplied with fresh provisions; the lime or lemon juice and sugar to be served out daily at the rate of an ounce each per day to each member of the crew, and to be mixed with a due proportion of water before being served out, or the other anti-scorbutics, if any, at such times and in such quantities as Her Majesty by Order in Council may from time to time direct:

(6.) If at any time when such lime or lemon juice or anti-scorbutics is or are so served out as aforesaid any seaman or apprentice refuses or neglects to take the same, such neglect or refusal shall be entered in the official logbook in the manner provided by the Two hundred and eighty-first Section of the principal Act, and shall be signed by the master and by the mate or some other of the crew, and also by the surgeon or medical practitioner on board, if any:

And if in any such ship as aforesaid such medicines, medical stores, book of instructions, lime or lemon juice, sugar, or anti-scorbutics as are hereinbefore required, are not provided, packed, and kept on board as hereinbefore required, the owner or master shall be deemed to be in fault, and shall for each default incur a penalty not exceeding Twenty pounds, unless he can prove that the non-compliance with the above provisions, or any of them, was not caused through any inattention, neglect, or wilful default on his part; and if the lime or lemon juice and sugar or other anti-scorbutics are not served out in the case and manner hereinbefore directed, or if entry is not made in the official log in the case and manner hereinbefore required, the master shall be deemed to be in fault, and shall for each default incur a penalty not exceeding Five pounds, unless he can prove that the non-compliance with the above provisions, or any of them, did not arise through any neglect, omission, or wilful default on his part; and if in any case it is proved that some person other than the master or owner is in default in any case under this section, then such other person shall be liable to a penalty not exceeding Twenty pounds.

5. Any person who manufactures, sells, or keeps or offers for sale any such medicines or medical stores as aforesaid which are of bad quality, shall for each such offence incur a penalty not exceeding Twenty pounds.

6. In any British Possession out of the United Kingdom the governor or officer administering the Government for the time being shall, subject to the laws of such Possession, have power to make regulations concerning the supply within such Possession of lime or lemon juice, and anti-scorbutics for the use of ships; and any lime or lemon juice, or anti-scorbutics duly supplied in accordance with any such Regulations, shall be deemed to be fit and proper for the use of ships.

7. Whenever it is shown that any seaman or apprentice who is ill has, through the neglect of the master or owner, not been provided with proper food and water according to his agreement, or with such accommodation, medicines, medical stores, or anti-scorbutics as are required by the principal Act or by this Act, then, unless it can be shown that the illness has been produced by other causes, the owner or master shall be liable to pay all expenses properly and necessarily incurred by reason of such illness (not exceeding, in the whole, three months' wages), either by such seaman himself, or by Her Majesty's Government, or any officer of Her Majesty's Government, or by any parochial or other local authority on his behalf, and such expenses may be recovered in the same way as if they were wages duly earned: Provided that this enactment shall not operate so as to affect any further liability of any such owner or master for such neglect, or any remedy which any seaman already possesses.

8. Where a seaman is, by reason of illness, incapable of performing his duty, and it is proved that such illness has been caused by his own wilful act or default, he shall not be entitled to wages for the time during which he is, by reason of such illness, incapable of performing his duty.

9. The following Rules shall be observed with respect to accommodation on board British ships (that is to say),—

(1.) Every place in any ship occupied by seamen or apprentices, and appropriated to their use, shall have for every such seaman or apprentice a space of not less than seventy-two cubic feet, and of not less than twelve superficial feet, measured on the deck or floor of such place:

(2.) Every such place shall be such as to make the space aforesaid available for the proper accommodation of the men who are to occupy it, shall be securely constructed, properly lighted and ventilated, properly protected from weather and sea, and, as far as practicable, properly shut off and protected from effluvium which may be caused by cargo or bilge water:

(3.) No such place as aforesaid shall be deemed to be such as to authorise a deduction from registered tonnage, under the provisions hereinafter contained, unless there is or are in the ship one or more properly constructed privy or privies for the use of the crew; such privy or privies to be of such number and of such construction as may be approved by the surveyor hereinafter mentioned:

(4.) Every such place shall, whenever the ship is registered or re-registered, be inspected by one of the surveyors appointed by the Board of Trade under Part IV. of the principal Act, who shall, if satisfied that the same is, in all respects, such as is required by this Act, give to the Collector of Customs a certificate to that effect, and thereupon such space shall be deducted from the register tonnage:

(5.) No such deduction from tonnage as aforesaid shall be authorised unless there is permanently cut in a beam, and cut in or painted on or over the doorway or hatchway of every such place, the number of men which it is constructed to accommodate, with the words "Certified to accommodate seamen":

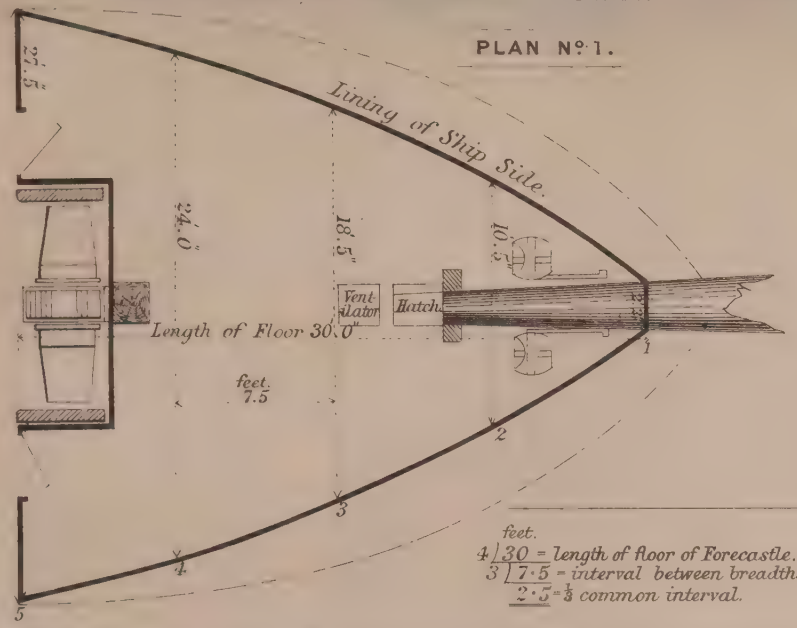
(6.) Every such place shall be kept free from stores or goods of any kind, not being the personal property of the crew in use during the voyage:

(7.) Upon any complaint concerning any such place as aforesaid, one of the surveyors appointed by the Board of Trade may inspect such place, and if he finds that any of the provisions of this Act with respect to the same are not complied with, he shall report the same to the Collector of Customs at the port where the ship is registered, and thereupon the registered tonnage shall be altered and the deduction aforesaid in respect of space disallowed, unless and until it shall be certified by such surveyor, or by some other surveyor appointed by the Board of Trade, that the provisions of the Act in respect of such place are fully complied with:

(8.) If any such place in any ship is not kept free from goods and stores as aforesaid, the master shall be deemed to be in fault, and shall for every such failure to comply with the provisions of this section,

PLAN OF A TOP-GALLANT FORECASTLE OF A SAILING SHIP OF 1000 TONS REGISTER.

PLAN Nº 1.



feet.
4) 30 = length of floor of Forecastle.
3) 7·5 = interval between breadths.
2·5 = ⅓ common interval.

Superficial Area of Floor.

Nº of Breadth	Breadth	Multiplier	Product	Deduction for Incumbrance.	Length	Breadth	Area.
1	2·2	1	2·2	Bowsprit	11·5	2· =	23·
2	10·5	4	42·0	Compressors	2·0	2·8 =	5·6
3	18·5	2	37·0	Hatch	2·5	2· =	5·
4	24·0	4	96·0	Ventilator	2·5	2· =	5·
5	17·5	1	27·5	Windlass	11·5	3· =	34·5
						Total	73·1

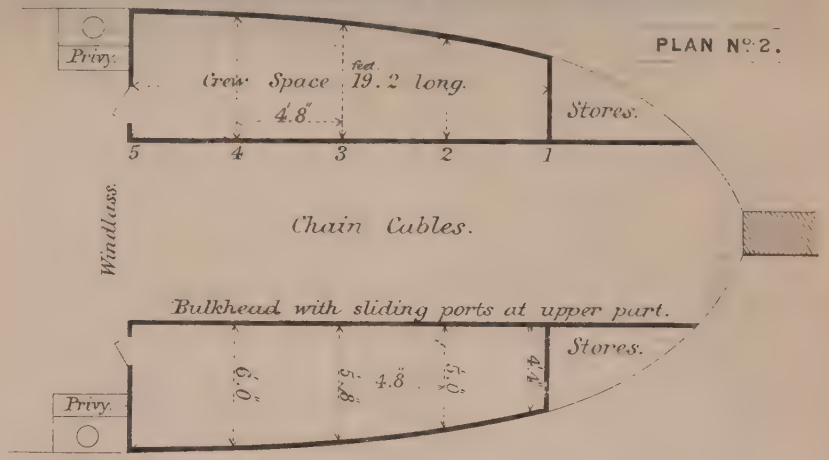
Sum of Products 204·7
2·5 = ⅓ Common interval.
1023 5
4094
511·75 = gross area of floor.
73·1 = deductions for incumbrances.
12) 438· = clear area of floor.
36 = persons at 12 s. feet each, and this will be the number that the crew space will be certified to accommodate, seeing that it is the smallest of the quotients obtained by the two Calculations. (see Article 3, of Practical Instructions.).

Cubic Capacity of Space.

438·0 clear area.
6·5 height.
2190 0
2628 0
8) 2847·00 = Cubic Capacity.
9) 355
39 persons at 72 Cubic feet each.

PLAN OF A TOP-GALLANT FORECASTLE OF A SAILING BARQUE OF 500 TONS REGISTER.

PLAN Nº 2.



feet.
4) 19·2 = length of floor of crew space.
3) 4·8 = distance or interval between breadths.
1·6 = ⅓ common interval.

Superficial Area.

Number of Breadths.	Breadths.	Multipliers.	Products.
1	4·4	1	4·4
2	5·0	4	20·0
3	5·8	2	11·6
4	6·0	4	24·0
5	6·0	1	6·0

Sum of Products 66·0
1·6
396 0
660
12) 105·60 Area.
8) persons on each side at 12 s. feet each.

Cubic Capacity.

feet.
105·6 area.
5·5 height.
5280
5280
8) 580·80 Capacity.
9) 72
8) persons at 72 c. feet each on each side.

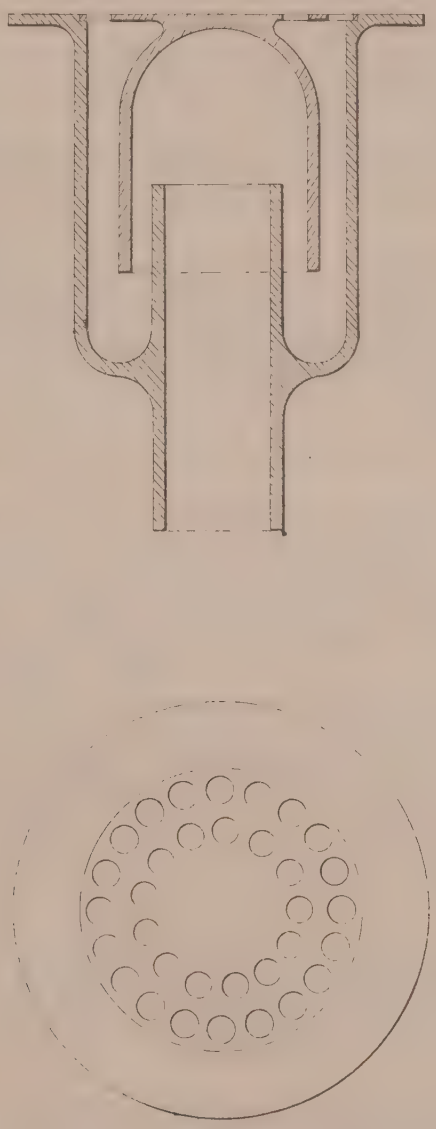
Therefore the number that this Forecastle will be certified to accommodate will (both by the computation of superficial area and cubic capacity) be eight on each side.

(To face page 38.)

Appendix C.

PLAN OF GOOD TRAP TO PREVENT THE EFFLUVIUM GETTING INTO CREW SPACE.

HALF SIZE.



section, forfeit and pay to each seaman lodged in such place the sum of one shilling a day for each day after complaint made to him by any two or more of such seamen during which any goods or stores, not being the personal property of the crew, are stored or kept therein :

(9.) If in any other respect the provisions of this section are not observed with respect to any such place in any ship, the owner shall be deemed to be in fault, and shall for every failure to comply with the provisions of this section incur a penalty not exceeding twenty pounds.

10. The following rules shall be observed with respect to the medical inspection of seamen; that is to say,—

(1.) At any port where there is a Local Marine Board, the Local Marine Board, and at other ports in the United Kingdom, the Board of Trade, may appoint a medical inspector of seamen :

(2.) Such medical inspector of seamen shall, on application by the owner or master of any ship, examine any seaman applying for employment in such ship, and shall give to the Superintendent of the Mercantile Marine Office, a report, under his hand, stating whether such seaman is in a fit state for duty at sea, and a copy of such report shall be given to the master or owner of the ship :

(3.) The master or owner applying for such inspection shall pay to the Superintendent such fees as the Board of Trade direct, and such fees shall be paid into and form part of the Mercantile Marine Fund :

(4.) The said medical inspectors shall be remunerated for their services as the Board of Trade may direct, and such remuneration shall be paid out of the Mercantile Marine Fund :

(5.) In British Possessions out of the United Kingdom, the governor or other officer administering the Government for the time being shall have the power of appointing medical inspectors of seamen, of charging fees for inspections when applied for, and of determining the remuneration to be paid to such inspectors.

11. If any British subject commits any crime or offence on board any British ship, or on board any foreign ship to which he does not belong, any court of justice in Her Majesty's dominions which would have had cognisance of such crime or offence if committed on board a British ship within the limits of the ordinary jurisdiction of such court, shall have jurisdiction to hear and determine the case as if the said crime or offence had been committed as last aforesaid.

12. The harbour master for the time being of the harbour of Holyhead, in the event of its seeming meet to Her Majesty to assign to him Her Majesty's commission to act as a justice of the peace within the limits within which he is empowered to act in harbour matters, shall, during the continuance of such assignment and of his tenure of the office of harbour master, execute, within such limits, the duties of a justice of the peace, notwithstanding he may not be qualified by estate to be a justice of the peace for a county, and shall have within such limits the same power and jurisdiction as a stipendiary magistrate has by Act of Parliament when sitting at a police court or other place appointed in that behalf.

Lights and Fog Signals.

Uniformity in placing lights necessary.

169. The attention of the Board of Trade has frequently been called to the want of uniformity in the range of the lights of sea-going ships, and in the position of the screens and other fittings. Surveyors should therefore be very particular in examining the lanthorns containing the mast-head light, the coloured side lights, and the anchor light of steam and sailing vessels; and in satisfying themselves that in all respects they are in accordance with the regulations. The regulations are contained in Arts. 2 to 9 of the "Regulations for preventing Collisions at Sea."

Importance of inspection.

170. The Board of Trade attach great importance to the inspection of the lights referred to in the foregoing regulations, and regard it as one of the most important duties intrusted to the surveyors. At their request, the Commissioners of Customs, with a view to the enforcement of the regulations, have instructed their out-door officers to at once report to the surveyors any cases of infringement of the rules which may come under their notice. But the surveyors themselves should take every opportunity of inspecting the lights of vessels lying within their districts, more especially in cases where they have reason to believe that the regulations are evaded, either wholly or partially; and whenever they are called upon to survey crew spaces, or to do anything on board a ship, they should inspect the lights and fog signals under the Acts.

Upon visiting a vessel for the purpose of inspecting her lights and fog signals, the surveyor should first inquire of the master for the certificate of inspection.

If the master produces the certificate in question, the surveyor should compare the particulars of the lanthorns and screens, and their position as given in that certificate, with the description and position of the lanthorns carried on board. He should also inspect the fog signals on board.

If the surveyor finds that any particulars, as stated on the certificate, are not in accordance with the state of things on board, he should deal with the vessel as if she had not a certificate, and should withdraw that certificate, and when all is in accordance with the regulations give another in the usual way. The certificate that is withdrawn should be cancelled, and the reasons stated on the face of it by the surveyor, and sent to the Board of Trade. It will then be sent to the port where it was originally issued, and a copy of the endorsement is to be put on the copy in the light-book; it is then to be returned to the Board of Trade.

With a view to the identification by the surveyor of lanthorns already passed, he is authorised to indelibly impress some part of the lanthorn in such a manner and with such a mark as may from time to time be fixed by the Board of Trade. He should be careful that it does not impair the efficiency of the lanthorn. It should be impressed in a place where the surveyor is sure to detect traces of it if it is removed. A description of the mark should also be inserted in the certificate.

 171. In

As to detaining ships.

171. In cases in which lights and the means of making fog signals are not fitted and provided in accordance with the regulations for preventing collisions at sea, the surveyor making an inspection should be careful to fill up one of the forms supplied for the purpose, specifying the additions or alterations required, and give or send it by post to the owner, master, or agent. He should point out to owners and masters the necessity of a strict compliance with the regulations, and he should do all in his power to prevent unnecessary delay or inconvenience. A report on the form supplied for the purpose is to be sent at once to the Collector of Customs, who will either, under Section 30 of the Merchant Shipping Act Amendment Act, 1862, refuse to grant the vessel a clearance, or allow her to proceed to sea, until he receives from the surveyor a report on the proper form that the regulations are complied with; but the surveyor should be careful to use discretion in cases involving the detention of vessels for non-compliance with the regulations as regards the lights and fog signals. They need not in all cases detain the ship. For instance: (*a.*) When the vessel is not about to leave the United Kingdom; (*b.*) When the vessel is supplied with lights, &c., but there is a question as to complying with the regulations respecting fitting, power, condition, &c.; (*c.*) When there is no reason to apprehend delay, or to doubt the good faith of the owner or master in carrying the regulations, &c., into effect.

Notice to be sent to owner.

172. The surveyors should forward a notice to the owner, master, or agent. If the vessel should afterwards leave one port in the United Kingdom for another port also within the United Kingdom, before the surveyor is satisfied that the requirements have been complied with, he should be careful to communicate with the surveyor of the district or port to which the vessel is about to proceed or has proceeded, at the same time forwarding to him a statement of the expenses which have been incurred, on account of the vessel, and giving notice that a fee is due in accordance with the regulations in addition thereto.

Defects, when made good, certificate to be given.

173. When the additions or alterations required and notified to the owner have been made, and the surveyor is satisfied, on further inspection, that the regulations are complied with, a form supplied for the purpose should be filled up and sent to the owner or master, and when the expenses named on the forms have been paid, the surveyor should send to the Collector a certificate under his hand (as required by the Act), on the proper form, and should fill up and deliver or send to the owner, master, or agent a certificate of inspection, a copy of which should immediately be sent to the Board of Trade, and also entered in the Office Light Book, with the individual surveyor's rotation number for light certificates. This rotation number should be entered on the original certificate as well as on the copy sent to the Board of Trade.

Lanthorns.

174. In order, as far as possible, to ensure uniformity, and especially to guard against lanthorns being condemned at one port after they have been passed at another, the Board think it right to point out that,—(*a.*) If the back and side of the lanthorn are not less than nine inches, and if the height of the lanthorn inside is not less than 11 inches exclusive of the chimney; (*b.*) If the lanthorn is sufficient in all other respects, is properly constructed, fitted, and arranged, and is in good and serviceable condition; (*c.*) If the lens is not less than five inches in height; (*d.*) If the coloured lens of any lanthorn to be used for a side light is not less than the third of a circle; (*e.*) If the chord of the arc made by the lens is not less than eight inches; (*f.*) If the colour is good and the lens is in all respects efficient; (*g.*) If the reflectors are of sufficient size and good, and not made of glass; then the surveyor need not hesitate to pass them, and in making his measurements he need not be particular to the eighth part of an inch, more or less, except when paraffin is used.

Surveyors should bear in mind that lanthorns in which paraffin is burned should, as a rule, be more roomy than candle or oil lanthorns.

Method of taking dimensions of lanthorns.

175. The following should be noted:—

1. That the "length of the inboard screens" must be measured three feet forward from the front of the lanthorn;

2. That the height of the lanthorn means the internal measurement from the upper side of the bottom of the lanthorn to the under side of the top, exclusive of the chimney;

3. That the "breadth of the lanthorn" means the measurement of the back and the side when the back and the side form an angle, and means the diameter when the lanthorn is circular;

4. That the "length of the lens" means the length of the chord of the arc made by the lens; and,

5. That the "height of the lens" means the distance from the top to the bottom of the lens.

Size of lens.

176. Inferior lamps contain a lens of only a quarter of a circle (Fig. 1).*
Lamps so fitted are generally defective in range; they should always be regarded with suspicion,

* *See* Diagrams on separate sheet.

Fig. 1.

Fig. 2.

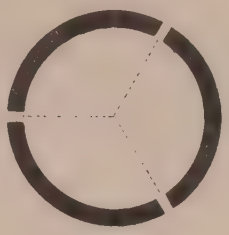


Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

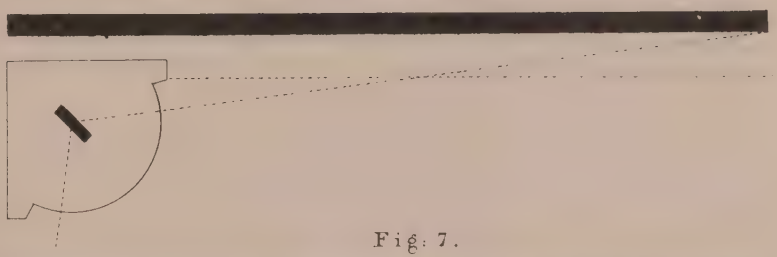


Fig. 7.

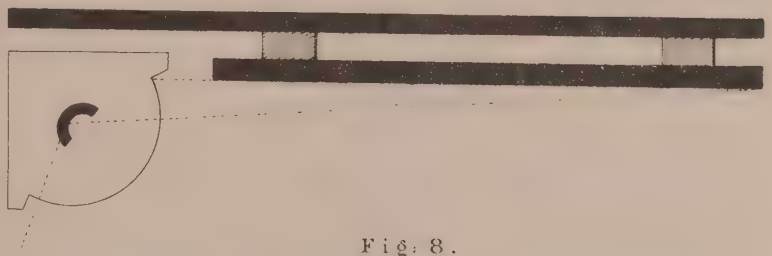


Fig. 8.

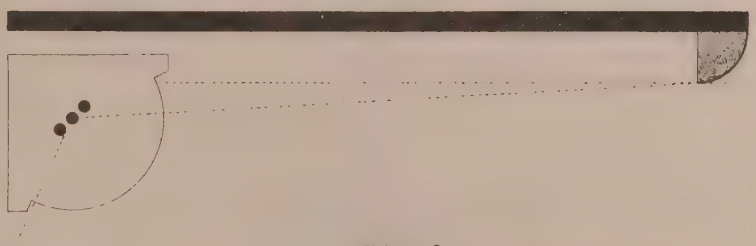


Fig. 9.

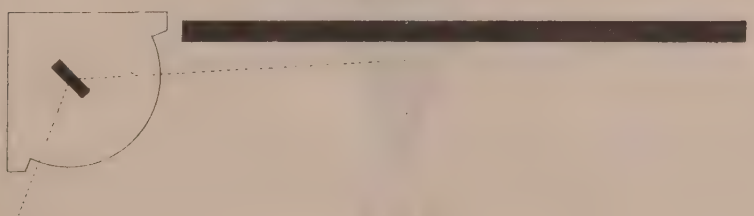


Fig. 10.

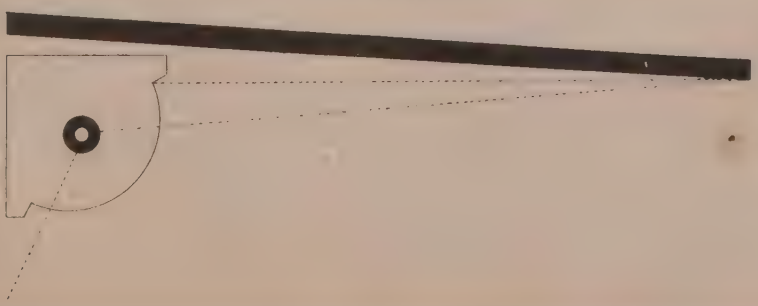
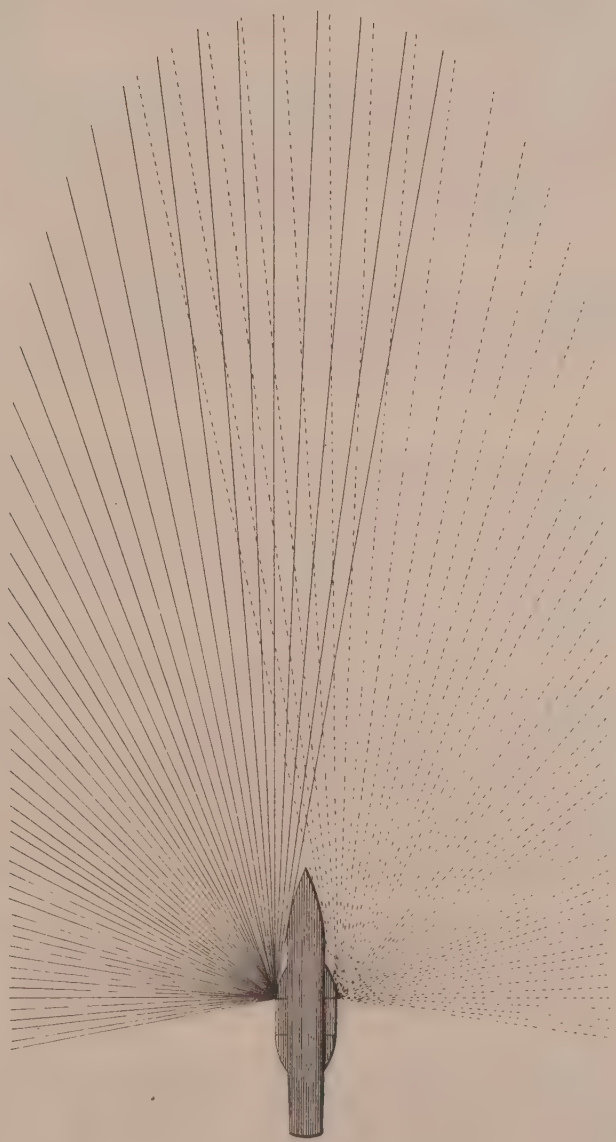


Fig. 11.



suspicion, and should not be passed unless the light is seen clearly to show over the required arc. Lenses should be of the range shown in Fig. 2,* viz., an arc of 10 points of the compass. Surveyors should bear in mind that a lens made of common or rough glass of one thickness throughout cannot be as efficient as a carefully constructed plano-convex or dioptric lens, and that wicks of a less size than from about 1¾ inches to 2 inches are not likely to be sufficiently powerful for ships' lights, except where paraffin is used; then the wicks may be less, but should not in any case be less than 1 inch. A lanthorn deficient in either of the points named (lens or wick) is not likely to comply with the regulations, unless the deficiency is counterbalanced by some other advantage. Of this, however, the surveyor should be fully persuaded. The surveyors should endeavour to discourage the use of common lenses, often little better than pieces of glass cut out of a fish globe; and they should never set aside a properly constructed plano-convex lens, or a dioptric lens, in favour of curved glass of uniform thickness, or of a nearly uniform thickness throughout, unless the lanthorn contains burners of exceptional power, giving a light of exceptional brilliancy.

The common lenses, of which a section is given in Fig. 3,* do not in any way assist in concentrating the light. On the other hand, they do not absorb as much light as a thick lens coloured throughout.

Description of lens.

177. If the section of a lens taken from top to bottom resembles Fig. 1, the lens (which in such a case is only a piece of thin curved coloured glass) will in itself be less efficient than the lens of which a section is shown in Fig. 4* or Fig. 5;* and in cases where lanthorns are fitted with glass of the common description, pointed out and intended to be illustrated (Fig. 3), the lights and reflectors should be more powerful than those given in the table above, to make up for the deficiency in the power of the plain lens.

The above are intended to be vertical sections of lenses, and it is always to be understood that the lenses, Figs. 4 and 5, are properly constructed with a film of colour only on them, and are not coloured bodily throughout. If they are a mass of coloured glass, they will serve as screens rather than as means for concentrating the light.

A common lens with a good light is better than the best lens with a poor light.

Screens.

Fitting of screens of coloured side lights.

178. The Regulations require that the coloured side lights shall be fitted with inboard screens projecting at least three feet forwards from the lights. Care must be taken that the screens are three feet long, or such greater length as the position of the light with regard to the screen and its distance from the head of the vessel may render necessary.

The surveyor would do well to observe the effect of alterations in the distance of a side light from its inboard screen. He should also bear in mind that if the lanthorn is placed at a few inches outside an ordinary straight screen of three feet in length, or even against such a screen, the rays of light will be found to cross the end of the screen, so as to be visible to a vessel approaching upon the opposite bow. *See* Fig. 6.

The inboard screens should be so fitted as to prevent the red and green rays crossing too close to the ship. There are many ways of doing this; for example, the screen may be lengthened, or another board may be placed outside it (Fig. 7);* or a chock (equal in thickness to the distance between the inner edge of the lens and the side of the screen) may be secured to the fore end of the screen (Fig. 8);* or the lamp may be so placed that the outside of the screen will come against the inner edge of the lens (Fig. 9);* or the screens may be so placed that the distance across the ship between their outer sides at the fore end shall be equal to the distance between the inner edges of the lenses of the two lamps (Fig. 10).*

For both lights to be seen ahead it is necessary that the red and green rays should cross at a certain distance ahead. Surveyors will probably find that if the inboard edge of the wick touch a line that is parallel with the keel of the ship, and that cuts the outer edge of the forward end of the inboard screen, the rays will cross suitably.

Surveyors should give this subject their serious consideration.

Screens never to be secured to the rigging.

179. The screens for the coloured side light are never to be secured to the rigging When the screens are fixed abreast of the rigging they should be placed on a light framework, so that the position and direction of the light may not be prejudiced or affected by the action of the vessel. Whenever the screens for the side lights are attached to moveable davits bending outwards over the sides of the ship, the davits must be fitted with stop-pins or distance-rods, so contrived and arranged that when the stop-pins are in their places the screens on the davits shall be in such position as to ensure that each side light is shown in the direction required by the Regulations. When davits or stanchions are used, and go through the top-gallant or main rail, they should be carried down into sockets fixed on the covering-board or water-way. The davits must, of course, also be carried outwards sufficiently far to ensure that each side light is placed clear of obstruction, and shows as a clear, uniform, and unbroken light over 10 points of the compass, and in the directions required by the Regulations.

180. In

* *See* Diagrams on separate sheet.

Not to be abaft the broadest part of the ship.

180. In inspecting or surveying the lanthorns containing the red and green lights, special care should be taken that they are so placed that the lights will not be obscured by any of the fittings of the vessel, as cat-heads, boats, boat's davits, sails, and rigging, &c.; with this view care should be taken that the side lights are not placed too far aft. A good position for the lanthorn containing the side lights of steamers is abreast of the foremost shroud of the fore-rigging, if they can be carried there; but in bad weather in many vessels they cannot well be carried there. The surveyor will therefore not insist upon their being placed in this position, but should object to their being placed abaft the greatest beam of the vessel, both in steam vessels and sailing vessels. The exact position of the lamps must, of course, to some extent be governed by the size, form, and rig of the vessel.

Mast head light in steamers.

181. The surveyors are to be careful to see that every steamer has fittings for the lanthorn for the white light "at the foremast head," or elsewhere in front of the foremast head on an independent stay, fitted with a fork and a piece of metal tube running up the stay to carry the fork; and, secondly, to see that the light will show for the distance and in the direction required by the Regulations. Surveyors are not to advise owners how to arrange or modify sails, but are to decline declarations if the Regulations are not complied with. The surveyors are, if they think it necessary, to see the sails set. They are to go aloft to the masthead in all cases before they give their declarations. Where a surveyor is too stout, or is from other causes unfit or unable to go aloft himself, he should not give a declaration without one of his colleagues goes aloft for him and in his presence.

Opinion of Attorney General, &c., as to placing lights.

The following substance of an opinion with respect to this subject, recently given by the Attorney General, the Solicitor General, and the Queen's Advocate, should be borne in mind by the surveyors:—

(*a.*) Side lights and lanthorns, otherwise unexceptionable, fixed in such a position that they may be obscured by the lower corners of the ship's square foresail cannot be considered to be fixed as required by Article 3 of the Regulation.

(*b.*) In the event of such side lights and lanthorns being so fixed that the lower corners of the square foresails can obscure either or both such lights, the surveyors or inspectors may require the master or owner of the ship either to move the lanthorns further forward, and to fix them where the lights cannot be obscured, or to cut off so much of the lower corners of her square foresail as causes, or is likely to cause, such obstruction.

(*c.*) That it is the duty of the surveyors to refuse to grant the declarations under Section 309, Sub-section 2, of the Merchant Shipping Act, 1854, unless the light will, in all conditions of the ship and her sails, be clearly seen in the direction and for the distance required.

Vessels to be detained unless lights show for the directions required by the regulations.

182. In the event of such master or owner neglecting or refusing to alter the position of the lanthorns, or cut away such portion of her lower courses as the surveyor or inspector may direct, such surveyor or inspector may report the fact to the collector of Customs for the purpose of stopping the ship, and such collector may refuse to grant the vessel a clearance under Section 30 of the Merchant Shipping Act Amendment Act, 1862, until he receives a report from the surveyor or inspector to the effect that his requirements have been complied with.

Consequences of altering lights when surveyor has passed them.

183. If after a vessel has been passed by such surveyor or inspector as carrying properly constructed and fixed lanthorns and lights, the master fixes them in such a position that they may be, or are, obscured by the vessel's square foresail, and are not, under such circumstances, visible for a distance of two miles from right ahead to two points abaft the beam, on the respective sides, as required by Article 3, read in connection with Article 20 of the Regulations, such master will be guilty of a misdemeanour under Section 27 of the Merchant Shipping Act Amendment Act, 1862.

Steam whistle and bell, how to be placed.

184. An efficient steam whistle, at least eight feet above the deck, and situated forward of the funnel; or, if there be more than one funnel, forward of the foremost funnel; also a bell and fog-horn should be provided in steam as well as in sailing ships. The steam whistle should be surveyed by the surveyor, and care should be taken that both it and the fog-horn and bell are such, and in such condition, as to meet the requirements of the Regulations. The steam whistle must be above, and clear of, or in front of, any deck-houses, &c., that is likely to obstruct the sound. It is obviously of no use to supply a steam whistle and then to place it behind a house, or funnel, or ventilator, or behind any erection likely to obstruct the sound.

The fog bell also should be hung clear of all obstructions that are likely to prevent the sound spreading in all directions round the ship. It should not be less than eight inches diameter inside.

Fog horns.

185. A proper *mechanical* fog-horn should be provided of good power. The fog-horn can be such that it can be blown by steam from a donkey boiler or from the main boiler, or it may be a horn that can be blown by hand. The fog-horn should be of some approved pattern known to emit great and penetrating sound. It should always be tried.

If

If a fog-horn is fitted to be blown by steam it must be supplemented by another to be blown by hand, unless, indeed, it is possible that the steam fog-horn can be used also by hand.

Lights and fog signals of foreign vessels.

186. Complaint has been made to the Board of Trade that certain sea-going steamships have infringed the Regulations by carrying coloured-light signals, used for steering and other purposes, which are not mentioned in, or authorised by, the said Regulations for preventing collisions at sea. The carrying of any lights other than the lights prescribed by the said Regulations for preventing collisions at sea is a distinct breach both of the provisions of the Merchant Shipping Act Amendment Act, 1862, and of the said Regulations, and will subject the offenders to the penalties and liabilities imposed by the said Act, which will be strictly enforced.

Surveyors have power to inspect them.

187. The surveyors have, undoubtedly, the right to inspect the lights, &c., of foreign ships within British jurisdiction; and in cases in which any surveyor has reason to believe, or discovers, that the lights of a foreign ship are imperfect, or the screens improperly placed, it is his duty to inspect them, and he should point out to the masters or the agents, if on board the vessel, when they are not in accordance with the Regulations, and it is the surveyor's duty to report to the Board of Trade when he finds foreign vessels' lights are not in accordance with the Regulations. The Board will then give such directions as may be considered best.

MERCHANT SHIPS (SURVEYS).

COPY of INSTRUCTIONS issued by the BOARD of TRADE to the SURVEYORS appointed by them with reference to their DUTIES under the MERCHANT SHIPPING ACTS, 1854 to 1873.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed,*
11 *August* 1875.

[*Price* 1 *s.* 6 *d.*]

423.

Under 6 *oz.*

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MERCHANT SHIPS.

RETURN to an Order of the Honourable The House of Commons, dated 21 May 1875;—*for*,

COPY "of a CIRCULAR issued by the Board of Trade, and of the REPLIES received thereto, on the Subject of the Necessity, or otherwise, for TESTING IRON used in the Construction of MERCHANT SHIPS."

Board of Trade,
21 May 1875.

T. H. FARRER.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed*,
21 *May* 1875.

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COPY of a CIRCULAR issued by the Board of Trade, and of the REPLIES received thereto, on the Subject of the Necessity, or otherwise, for TESTING IRON used in the Construction of MERCHANT SHIPS.

— No. 1. —

(M. 4764.)

COPY of CIRCULAR LETTER from Board of Trade on the Necessity, or otherwise, of Testing Iron used in Construction of Merchant Ships.

Board of Trade, Whitehall Gardens,
30 March 1875.

Sir,

I AM directed by the Board of Trade to enclose a copy of a clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament. Enclosure.

The Board of Trade desire me to inquire of you what effect such a clause would, in your opinion, be likely to have on the manufacture and cost of iron and of ships and machinery; how far you think it would add to the security of life and property at sea; whether it would be likely to attain the desired end of ensuring that good iron alone is used in ships, and whether it would work well in every-day practice without fear of much evasion, and, generally, how far such a test is necessary or desirable.

I am, &c.
(signed) *Thomas Gray.*

P. S.—The Board of Trade would feel obliged if a reply to this letter could be forwarded within a week at the latest.

Enclosure.

TEST OF IRON.

28*a*. WHERE, after the 1st day of January 1876, any iron is supplied to be used in the construction of any ship, or any ship is after the said day constructed of iron in whole or in part, the person to whom such iron is supplied, or for whom such ship is constructed, or any agent or assignee of such person, may at his own expense test at any place licensed by the Board of Trade for testing chain cables and anchors, or to be licensed for the purposes of this section, any iron so supplied or used in the construction of such ship, and shall not be bound to accept such iron or ship (any contract notwithstanding) unless the iron so supplied or used in the construction of the ship be at the least of such quality and strength as to withstand a tensile strain of tons to the square inch, and a bending strain of degrees, or to withstand instead of such bending strain an extension of per cent.

REPLIES.

— No. 2. —

(M. 6824.)

Mr. *Hannah*, Shipwright and Engineer Surveyor, Barrow-in-Furness.

Board of Trade Surveyor's Office, Barrow,
4 May 1875.

Sir,

IN reply to the enclosed letter, in reference to the proposed clause in the new Merchant Shipping Bill now before Parliament, I beg to say that I consider the test proposed would be a means of insuring a better class of iron for ship-building purposes; but I have no doubt but it would increase the cost of the iron and

consequently the iron ships built, and I think it would assist in the security of life and property at sea.

To carry out the requirements proposed, it would be necessary to have a large staff to prevent much evasion.

In reply to the last question, I doubt whether it is either desirable or necessary to interfere so far in the manufacture of iron and the building of iron ships.

The probability is, that manufacturers would get the iron to meet the test and no more, the same as they now make iron for chain cables.

I am, &c.

The Assistant Secretary, (signed) *Walter Hannah.*
Marine Department, Board of Trade.

— No. 3. —

(M. 7153.)

Messrs. *Sowter & Fabian*, Shipwright and Engineer Surveyors, Belfast.

Board of Trade Surveyor's Office,
47, Queen's-square, Belfast,
8 May 1875.

Sir,

We beg respectfully to state that we have duly considered the clause in reference to the test of iron proposed to be inserted by Mr. E. J. Reed into the Merchant Shipping Bill before Parliament, in accordance with your instructions (M. 4764), and we now beg to report as follows:—

We have no hesitation in stating our opinion, that until the present system of insurance is considerably modified, whereby an owner is completely reimbursed, and oftener a gainer, by the loss of his vessel, legislation is required to obtain a generally better class of iron for shipbuilding than at present, the strength and ductility of which shall not be below a certain standard; and this applies not only to the ship's hull, but to the machinery as well, and especially to the boilers, for iron which contains any impurity, or cinder, rendering it hard and liable to crack at the rivet holes in punching, and from want of ductility is ill prepared to stand great strain or sudden concussion.

At present a shipbuilder who desires to build a first class vessel using the best iron, and employing first class labour, is placed at an unfair advantage when he enters the market to compete with others whose only object is to build vessels to sell, the owners not caring if they obtain a certain standard class of vessel which is recognised by the underwriters.

It is well known that the surveyors to Lloyds' and the Liverpool Committee have instructions to test and reject inferior iron; but owing to the organisation of those committees, any surveyor is bound by his peculiar position to exercise great discretion in placing himself in opposition to a certain tacit standard of quality. It is only in very gross and glaring cases that he would be able to interfere with success, and, therefore, to a great extent he acts expediently; but we would be sorry to infer that their supervision is therefore useless, but, on the contrary, it is a very useful check on all, and more especially on the unscrupulous builders. Lloyds' rules require the iron to be of good malleable quality capable of bearing a strain of 20 tons per square inch, the material being guaranteed by the makers' brand, and the Liverpool Committee's rules are very similar.

In Her Majesty's service, the iron is subject to a more searching character, as the Board of Trade are no doubt well aware, plate iron (first class) being supplied subject to a tensile strain per square inch of 22 tons lengthways and 18 tons crossways, and the same iron with a forge test of such ductility as to allow of being bent to an angle of 125 degrees lengthways and 90 degrees across. The cold forge test with the grain for plates varying in thickness from 1 inch to 3/16ths is required to be of such ductility as to bend from 15 degrees to 90 degrees, the angle being increased as the plate decreases in thickness and across the grain from 5 to 40 degrees.

Plate iron of the second class is subject to similar examination, but the tests are necessarily reduced, but not to a great extent.

There

There can be no doubt but that the expense of materials will be considerably increased should a thorough and efficient test be insisted upon, and it would be entirely useless to allow of this being partially carried out, for, if so, the iron for certain ships would be a specialty, but what is required is to insure a general increase in the standard quality of iron. We believe that once a manufactory is organised to turn out nothing but the best material, it is almost as inexpensively conducted as a manufactory of inferior grade.

However, the effect of this clause, if insisted on by an owner, would increase the cost of the iron by 5 per cent. and upwards, and facilities would be required for testing in the district where the vessel is built, and a special inspector to look after the interests of the owner; and looking at the whole circumstances, we cannot but think it would eventually require a Government officer entirely independent of the iron manufacturer and shipping interest to carry out this clause. Having now stated our views as regards the quality of iron, we venture to offer a few remarks on what is of as great importance, if not of more importance, namely, the workmanship. No one can fail to observe, in walking through a ship yard, the strain unduly exerted on plates to bring them into position, and the amount of drifting and coaxing before the holes are sufficiently fair to admit of the plates being riveted. We had a few months ago an opportunity of seeing two large Atlantic steamers in dock, and I think we are justified in saying that they had been most carelessly put together; thousands of rivets had to be taken out of each vessel, hardly a butt which was not leaky; four or five out of the rivets which held the bar keel and garboards were loose and driven out in one vessel, when the holes, instead of being found fair with one another, overlapped, forming crescent holes; no wonder the rivets were slack.

We are therefore of opinion that any legislation which would only provide for a good quality of iron being used would be insufficient, although of primary importance; but any legislation on which so many interests are at stake must be necessarily tentative.

In conclusion, we earnestly recommend that any test imposed must be a breaking test, and not a proof strain; if not, iron would only be made up to the proof strain, and of a medium quality.

We have, &c.
(signed) *John Sowter.*
Henry B. Fabian.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 4. —

(M. 7780.)

Mr. *Hamerton*, Shipwright and Engineer Surveyor, Bristol.

Sir, Bristol, 21 May 1875.

Referring to your Minute, 4764, I have the honour to report that I have little confidence in the proposed test, more especially in consideration of the clause "any contract notwithstanding." The publication on the iron of the *bonâ fide* maker of it, and *prohibition* of the names of *agents* or *middle men* being stamped on the iron, would do more than testing to insure quality.

I have, &c.
(signed) *Orme Hamerton.*

The Assistant Secretary,
Marine Department, Board of Trade,
Whitehall.

— No. 5. —

(M. 7446.)

Mr. *Neate*, Principal Surveyor for South Wales.

Board of Trade Surveyor's Office, Cardiff,
13 May 1875.

Sir,

Referring to attached clause respecting "test of iron." In my opinion this clause would, if introduced into the Merchant Shipping Act, add much to the cost of construction without increasing the security of life and property

at sea, as this, I imagine, is more a question of quality of *work* than material at any time; however good the general quality of iron might be, it would be possible to pick out a few plates which would or might condemn all.

It would, I think, be a fearful clog to the mercantile marine, would *not* work well in every-day practice, as it would open a way for no end of quibbles and the breaking of contracts, and few manufacturers, I should say, would accept such terms. It would doubtless be much evaded, and, in my opinion, such a test as is proposed is neither necessary nor desirable.

The test iron *has* to be put to in preparing it to go into its place in a vessel, together with a strict scrutiny during building, is, in my opinion, the best safeguard.

The Assistant Secretary, (signed) *W. H. Neate.*
Marine Department, Board of Trade.

— No. 6. —

(M. 7449.)

Mr. *Henri*, Engineer Surveyor, Cardiff.

Board of Trade, Surveyor's Office, Cardiff,
Sir, 13 May 1875.

HAVING been obliged to attend steam surveys, &c. at New Milford and elsewhere, I regret I was unable to reply to your queries relative to Mr. E. J. Reed's intended clause for introduction into the Merchant Shipping Act now before Parliament ere this.

I beg respectfully to acquaint you that, in my humble opinion, the *clause* would considerably increase the cost of *iron ships* and *machinery*, without adding much to the security of life and property. It is my belief the *test* could, and would in many instances, be evaded, and different sorts of iron introduced into the construction of ships. During my short experience in surveying iron vessels, I have found the fault *not* to lie so much in the *iron*, as in *inferior* workmanship, especially with respect to *riveting* and *badly fitted butts*.

I have, &c.
The Assistant Secretary, (signed) *H. A. Henri.*
Marine Department, Board of Trade.

— No. 7. —

(M. 6921.)

Mr. *Bone*, Principal Surveyor for Ireland.

Office of Surveyor of Steam Vessels, Custom House,
Sir, Dublin, 5 May 1875.

I HAVE the honour to acknowledge the receipt of your letter (M. 4764), dated the 29th ult., enclosing a copy of a clause proposed by Mr. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament.

In reply, I think that such a clause is calculated to improve the quality of iron for shipbuilding purposes; it will no doubt increase the cost of ships according to the class of iron used in the construction, and it will also add, in some cases, to the security of life and property at sea, and it would be likely to ensure good iron alone to be used in ships, and in time would work well in practice without fear of much evasion, provided owners appoint competent inspectors during the building of the ship. I think such a test is desirable to ensure the quality of the plates, and they should stand a test of 20 tons with the grain and 18 tons across the grain, and exension of not less than six per cent.

I have, &c.
The Assistant Secretary, (signed) *H. S. Bone.*
Marine Department, Board of Trade.

— No. 8. —

(M. 7229.)

Mr. *Grant*, Shipwright and Engineer Surveyor, Dundee.

Sir, Dundee, 10 May 1875.

In reply to the above, I am of opinion that such a clause as 28 *a* would have no permanent effect on the manufacture or cost of iron in general, and would not add to the security of life and property at sea, nor would it attain the desired end, that good iron alone is used in ships.

The test being optional, it would be evaded by all who have no object to pay the higher price for a better quality.

The persons for whom this clause is intended would do the same as they do now: relax the test to suit their circumstances.

In my experience, to add to the security of life at sea, a higher class of workmanship is as necessary as material; the two must be combined.

I am, &c.
(signed) *Jas. Grant.*

Assistant Secretary,
Marine Department, London.

— No. 9. —

(M. 7318.)

Mr. *H. Hoar*, Shipwright and Engineer Surveyor, Falmouth.

Sir, Falmouth, 9 May 1875.

Such a clause as the one proposed by Mr. E. J. Reed would, in my opinion, tend to increase the cost of iron, and would create undue interference with the trade, without gaining the desired object.

I am, &c.
(signed) *H. Hoar.*

The Assistant Secretary,
Board of Trade, Whitehall Gardens.

— No. 10. —

(M. 6826.)

Mr. *Murray*, Principal Surveyor for the West of Scotland.

12, James Watt-street, Glasgow,
Sir, 4 May 1875.

In reply to the inquiry of the Board of Trade on this subject, I do not think that Mr. E. J. Reed's proposal is calculated to effect the object he has in view.

I conceive that the use of bad iron in ships is encouraged quite as much by the owner who will not pay a fair price for his ship, as by any fault or fraud on the part of the iron manufacturer or shipbuilder; and I think that if cheap (and therefore presumably inferior) plates are to be had in the market, they would still be used for low-class ships, on the understanding that no test would be applied.

When a respectable owner is willing to give a fair price, he stipulates for a good make of iron to stand a tensile strain of, say, 20 tons on the square inch, or perhaps he specifies "boiler plates," and then employs an inspector to see that this quality is supplied; he therefore does not require legislative protection. A greedy shipowner, on the other hand, strikes a hard bargain with the builder, and knowingly shuts his eyes to the presumed inferiority of the material; and I think he would probably continue to do so, Mr. Reed's clause notwithstanding.

I believe, therefore, that the only effectual way to prevent the use of bad iron is to keep it altogether out of the market, which might perhaps be done by obliging the manufacturer to stamp a registered brand on all his plates, thus certifying them to be equal to, or exceeding, a minimum test approved by the Board of Trade.

I question whether a respectable builder would take a contract under Mr. Reed's clause, as one or two inferior plates are often found amongst a number of

good ones, which indeed might be picked out by an inspector, but would give an unprincipled owner a strong hold over the builder.

In practice I have not found that, as a rule, the quality of the iron used in shipbuilding is so bad as to be justly chargeable with the wreck or failure of iron ships; so that I scarcely think any legislation on this matter is yet called for.

I am, &c.
(signed) *Robert Murray.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 11. —

(M. 6923.)

Mr. *Ramsay*, Shipwright and Engineer, Surveyor, Glasgow.

12, James Watt-street, Glasgow,
5 May 1875.

Sir,

In reply to the Board of Trade inquiry on this subject, I do not think that Mr. E. J. Reed's proposal would effect the desired end. In iron vessels that are subjected to all the strains of heavy seas, and which have to run the risk of collisions, none other than the very best material should be used. With good well-worked plates the strength and durability of the vessels would be increased immensely, and I am within the mark when I say that the price of the plates would not be 2 *l.* per ton over that of the most inferior plates in the market. It is well known that these inferior low-priced plates are used extensively in the construction of the lowest class of vessels.

It is well known to those acquainted with the iron trade, that there are five or six different kinds of plates and as many different prices, and that it requires considerable skill to determine from appearance what is good and what is bad iron. It is therefore necessary that the material used in the construction of ships and machinery be tested to determine the quality; but I do not think the clause proposed by Mr. Reed would effect the object in view; as the shipowner who will only pay the very lowest price, and consequently receive in return the lowest class of vessel, would not be particular; in fact, would shut his eyes to the quality of the material, the proposed clause notwithstanding.

On the other hand, a shipowner who is willing to pay a fair price for his vessel stipulates for a certain quality of material, said material to stand certain tensile and bending strains, and he employs an inspector to see that these conditions are fulfilled. He therefore does not require legislative protection.

I conceive that the only effectual way to prevent the use of worthless iron is the establishment of public testing machines near the rolling mills at which samples of all the iron manufactured should be tested to tensile and bending strains to be determined by the Board of Trade, said samples to be chosen from the manufacturer's stock by an officer appointed by the Board of Trade.

I am, &c.
(signed) *James Ramsay.*

The Assistant Secretary
Marine Department, Board of Trade.

— No. 12. —

(M. 6827.)

Mr. *Fielden*, Shipwright and Engineer Surveyor, Glasgow.

12, James Watt-street, Glasgow,
4 May 1875.

Sir,

In answer to your letter (M. 4764), respecting the clause proposed by Mr. E. J. Reed, C.B., M.P., to be inserted in the Merchant Shipping Bill now before Parliament, I have the honour to submit that, in my opinion, the introduction of it will be attended with disadvantages; it will considerably increase the cost, and set up an unpleasant irritating suspicion between iron manufacturer, shipbuilder, and

and shipowner. Experience does not show that accidents have arisen through defective material. While good iron ought to be, and in my opinion is, provided for shipbuilding purposes, there are other classes of machinery, boilers in particular, that would claim a priority of attention; but, in the working up of iron, evidences of quality are exhibited which every practical man may discern for himself, and that not only during manipulation but by subsequent examination.

Any additional security to life and property afloat through the services of this clause I fail to see, for of whatever material the ship be built, unless it be put together in a workmanlike manner, nothing is gained by excellence of material.

To ensure that good iron be used in the construction of his vessel the owner is now at liberty to insert, as is sometimes done, a clause in the specification requiring that any portion of the material shall, at the discretion of his own appointed inspector, be tested.

It would probably lead to an uniformity of good iron being manufactured if all iron was subject to be tested by a Government officer.

I am, &c.

To Assistant Secretary, (signed) *J. Fielden.*
Marine Department, Board of Trade.

— No. 13. —

(M. 6922.)

Mr. *Wymer*, Shipwright and Engineer Surveyor, Greenock.

Sir, Greenock, 3 May 1875.

I HAVE the honour to acknowledge your letter of the 29th, and to state in reply, that I am of opinion that the clause in the Merchant Shipping Bill referred to as being proposed by Mr. Reed, M.P., might be very mischievous in its action; any iron supplied or used, being so indefinite as to leave it open to great injustice being perpetrated, under such a clause becoming law. I am also of opinion that a compulsory test would lead to much evasion, and would take a surveillance that would be almost out of the question to ensure the law being carried out. At present it is quite within the power of the shipowner to stipulate for any test of plates he likes in his specification; there is no law that the writer is aware of to prevent him doing so.

In 1855 it was considered that the plates then manufactured under the great demand, were inferior, but a ship that was built at that time (20 years ago) has gone through the hardest of work constantly at sea, and under all circumstances; this vessel the writer has known all the time, and watched well; she has never complained, no plate has ever been found defective, and she has completely belied the opinion formed of her plates at the time; this is not a solitary instance, but I instance it as one of many; no doubt many ships have complained, but the writer is of opinion, *more than the simple quality of the iron* has had to do with their troubles. While anxious for the safety of life and property, I am not of opinion that the testing of plates, &c., will alone be the cure for the present losses at sea.

I have, &c.

The Assistant Secretary, (signed) *F. W. Wymer.*
Marine Department, Board of Trade,
London.

— No. 14. —

(M. 7000.)

Mr. *Francis*, Shipwright and Engineer Surveyor, Holyhead.

Sir, Holyhead, 6 May 1875.

I BEG to say my opinion is, that it should be insisted on, that all iron used in the construction of iron ships should withstand a certain definite amount of tensile and bending strain, but what the strain should be I am not prepared to say; and also to suggest that figured drawings of vessels about to be built should

be submitted for the Board's (or some other competent body's) approval, similar to boilers now, and thus prevent the vessel after completion being detained and condemned as faulty in construction, although the iron supplied may have been of the required strength; by so doing, I consider it will add much to the security of life and property at sea. To carry the suggestions out efficiently will require a great deal of supervision, and considerably increase the first expense of both hull and machinery.

I am, &c.
(signed) *John Francis.*

The Assistant Secretary,
Marine Department.

— No. 15. —

(M. 7056.)

Mr. *Spear*, Shipwright and Engineer Surveyor, Hull.

Sir, Custom House, Hull, 6 May 1875.

In reply to your communication with reference to the clause proposed by Mr. E. J. Reed, to be introduced into the Merchant Shipping Bill now before Parliament, I beg to say that, in my opinion, the clause would (if operative, and assuming that the proposed standard is above the average strength of iron used at present) tend to improve the manufacture at an increased cost, and would add to the security of life and property, so far as it is affected by the material only; but whilst I am in favour of testing iron used in the construction of *all* structures upon which the safety of human life may depend, it appears to me that the clause as drawn is open to several objections:

1st. Under it, exception might be taken to any iron used in the construction of any ship, even in parts where inferior material would not affect the safety of the vessel.

2nd. If any person for whom a vessel was building had reason to suppose that he had entered into an unfavourable contract, he might have the material tested in the hope of finding an excuse to free himself from his engagement; whilst on the other hand, if anxious for the delivery of the vessel, he might overlook every defect, rather than delay her completion.

3rd. Any fixed standard is likely to become the maximum aimed at by the manufacturer.

4th. It would hamper those who might prefer to use inferior quality of iron, and to introduce heavier scantling as compensation.

Assuming that a test is necessary, I am of opinion that it would be better to have samples of all iron tested and the quality stamped upon it before delivery, and to insist that all iron should be guaranteed by the manufacturer as up to a certain standard, unless otherwise specified.

I have, &c.
(signed) *John Spear.*

The Assistant Secretary,
Marine Department, Board of Trade,
London.

— No. 16. —

(M. 7146.)

Mr. *Stewart*, Shipwright and Engineer Surveyor, Hull.

Sir, Custom House, Hull, 8 May 1875.

I have the honour to acknowledge the receipt of your letter (M. 4764), dated the 29th instant, regarding the clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament.

1st. I am of opinion the effect of such a clause would improve the quality of iron used in shipbuilding, and add but little to the cost, as less weight would be required.

2nd. If an Act passed insisting that all iron should be of the best test on double-

double-worked quality, it would tend greatly to the security of life and property at sea.

3rd. As it is impracticable to test all iron employed in ship-building, the clause might not effect the desired end of only good iron being used.

4th. There could not be much evasion if it was understood that the builder or shipowner had the power at any time to have the iron tested during construction.

5th. It would be more satisfactory to have a few pieces of the iron tested now and again during construction, and a guarantee given by the manufacturer that all the iron supplied be of the best quality.

I have, &c.
(signed) *James Stewart.*

The Assistant Secretary,
Marine Department, Board of Trade,
London.

— No. 17. —

(M. 7011.)

Mr. *Bushby*, Assistant Shipwright and Engineer Surveyor, Hull.

Sir, Custom House, Hull, 6 May 1875.

With reference to the proposed clause to provide for the tests of all iron used in the construction of ships, accompanying your M. 4764, herewith enclosed, I am of opinion that, as the cost of iron would depend in a great measure upon the test to which it is to be subjected, the effect would be to hamper the manufacturer in some districts, while it would not be felt in others.

I doubt whether any test would add much to the security of life and property at sea that is not accompanied with a fixed rule for the proportions and scantling of ships, and although it would doubtless tend to improve the quality of iron used in ship-building, it could not reach in its present form all classes of ship, builder, and owner, as (both parties agreeing) they may still build a vessel of any iron they choose.

Although I think there is urgent need for some measure to prevent the construction of weak and flimsy ships, I do not think it desirable to lay down any hard-and-fast line of test (if a vessel is found to be constructed of iron unfit for the purpose, let her be declared unseaworthy), for although a ship built of oak, and copper fastened, is better than a soft-wood ship iron fastened, it would be unfair to stop the construction of soft-wood ships. Therefore, fix the test low, it would soon become the maximum strength; fix it high, it would unnecessarily interfere with builders and owners, who would prefer a cheaper iron with a fuller scantling.

As this is one of our greatest industries, great care should, I think, be taken how it is interfered with.

I have, &c.
(signed) *Robert Bushby.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 18. —

(M. 7147.)

Mr. *Richards*, Principal Surveyor for the East of Scotland.

Sir, Leith, 8 May 1875.

In answer to M. 4764, I respectfully beg to report that, in my opinion, it would be an advantage to subject to a test the iron employed in the construction of iron vessels, as it is impossible to ascertain by mere inspection whether it is good or not. I disapprove, however, of Mr. Reed's suggestion to leave it to the action of ship-builders or owners. As a rule, vessels are not ordered until they are really wanted for use, and they are then built as rapidly as possible, often under a heavy bond if not ready within a stated time. So long then as the iron does not look bad, or suffer in the working, there is a great inducement for the builder to accept it without test in order to avoid delay. This

applies, I think, with almost equal force to the owners. The clause proposed by Mr. Reed would, no doubt, sometimes be taken advantage of, and iron makers would occasionally have a number of plates returned to them. This risk could only be met by an increase in price, without, I consider, any general improvement taking place in the quality of iron. The test should be made by an independent person before the iron is sent from the iron works, in order, in the event of rejection, to prevent the delay and expense which would take place if tested after receipt at the ship-building yards.

I think there can be no doubt that additional security for life and property would result from any measure which would prevent the use of inferior iron in ships. Probably this would be shown in the most marked manner in vessels of extreme dimensions, and in those carrying heavy dead-weight cargoes, and in the prevention of the dismasting of vessels having iron masts.

Assuming that the test proposed would be meant principally for the iron employed in construction of the vessel, I think that usually employed in boilers and engines would be in excess of its requirements.

I have, &c.

The Assistant Secretary, (signed) *T. J. Richards.*
Marine Department, Board of Trade.

— No. 19. —

(M. 7145.)

Mr. *Rae*, Assistant Shipwright and Engineer Surveyor, Leith.

Sir, Leith, 8 May 1875.

In answer to letter M. 4764, I respectfully beg to express the opinion that it is doubtful if any improvement in the quality of iron would result from the insertion of this clause in the Merchant Shipping Act, if the initiative is to be taken by the owner or ship-builder. Both parties, as a rule, want the vessel built as rapidly as possible, and so long as the iron does not appear bad, or suffer in the working, neither would willingly incur the trouble and expense of testing it, or put up with the delay consequent upon returning a large number of plates.

I speak now of ordinary vessels. First-class owners and ship-builders would no doubt derive assistance from the clause; iron makers would thus occasionally have large orders returned on their hands, and such risk could only be met by an increase in price.

I am, however, of opinion that a test is very desirable, since it is absolutely impossible to detect by mere inspection whether iron is good or not; but it should be made at the directions of an independent person.

I have, &c.

The Assistant Secretary, (signed) *James Rae.*
Marine Department, Board of Trade.

— No. 20. —

(M. 7048.)

Mr. *Taylor*, Principal Surveyor for the Mersey District.

Custom House Arcade, Liverpool,
Sir, 7 May 1875.

In reply to the inclosed letter from the Board of Trade, dated the 29th ultimo, I can only say that in my opinion any such clause as that proposed by Mr. Reed to be inserted in the Merchant Shipping Bill would be most prejudicial to trade in this country, and furthermore would tend to drive our iron shipbuilding into the hands of foreigners; and although the following clause with regard to the quality of the material is always included in a specification drawn up by an engineer who understands his business, it is scarcely ever carried out, viz.:—

The whole of the iron to be of best quality, boiler plates and samples to be taken indiscriminately, which are to stand a tensile strain per square inch of 20 tons

tons lengthways, and 17 tons crossways, and capable of being bent when hot without fracture to an angle of 70° lengthways, and 40° crossways, and while cold without fracture, as follows:—

Thickness of Plate.	With the Grain.	Across the Grain.
$\frac{15}{16}$ to $\frac{13}{16}$ - - - - -	8°	3°
$\frac{12}{16}$ to $\frac{10}{16}$ - - - - -	12°	5°
$\frac{9}{16}$ to $\frac{8}{16}$ - - - - -	18°	8°

That the garboard strake, stringers, &c., &c., &c., to be of better quality, and to bear a tensile strain per square inch of not less than 21 tons lengthways, and 18 tons crossways, and capable of being bent while hot without fracture to an angle of 110° lengthways, and 75° crossways, and while cold without fracture, as follows:—

Thickness of Plate.	With the Grain.	Across the Grain.
$\frac{15}{16}$ to $\frac{13}{16}$ - - - - -	12°	5°
$\frac{12}{16}$ to $\frac{10}{16}$ - - - - -	16°	8°
$\frac{9}{16}$ to $\frac{8}{16}$ - - - - -	22°	10°

From the above remarks, I hope the Board of Trade will see how much the ship-builder would be bettered if Mr. Reed's suggestion were carried out.

I have &c.

The Assistant Secretary,
Marine Department, Board of Trade,
London.

(signed) *W. C. Taylor.*

— No. 21. —

(M. 7001.

Mr. *Bisset*, Assistant Principal Surveyor for Mersey District.

Custom House Arcade, Liverpool,
4 May 1875.

Sir,

In reply to M. 4764, referring to the clause proposed (by Mr. E. J. Reed, C.B., M.P.) for introduction into the Merchant Shipping Bill now before Parliament, I am unable to form an opinion as to what effect it would be likely to have on the cost of iron, and of ships and machinery, without first knowing the test to which it is proposed the iron shall be subjected, and for the same reason I cannot say whether it would add to the security of life and property at sea.

If a good standard were enforced with frequent tests, I have no doubt but there would be, *as a rule*, a better class of iron used, and I think this would work well in every-day practice without fear of much evasion, but as to good iron alone being used, that could not, I fear, be ensured without having each piece tested.

I am of opinion that it is desirable that iron used for ship-building purposes should be tested, and I beg to suggest the following as a standard:—

Plates tested cold, and lengthwise of the grain, to bear a tensile strain of 22 tons to the square inch, and 19 tons per square inch crosswise; all iron tested for tensile strain, to show an elongation and a fibrous fracture, and also to bear a bending strain of certain degrees as follows, viz.:—

Thickness of plate - -	$\frac{4}{16}$	$\frac{5}{16}$	$\frac{6}{16}$	$\frac{7}{16}$	$\frac{8}{16}$	$\frac{9}{16}$	$\frac{10}{16}$	$\frac{11}{16}$	$\frac{12}{16}$	$\frac{13}{16}$	$\frac{14}{16}$	$\frac{15}{16}$	$\frac{16}{16}$
Degrees of bending when cold, lengthwise of the grain.	60	50	45	40	35	30	26	23	20	18	17	16	15

In each of the above cases the iron when hot to bend to double the angle named.

Angle iron to be subjected to the same tensile and bending strains as those of the plates, and to open and close, when hot, to the following degrees, viz.:—

Angles	-	-	-	-	$\frac{1}{2}$	thick and under to open flat, and flange to close together.			
"	-	-	-	-	$\frac{9}{16}$	to open to 175 degrees, and close to 10 degrees.			
"	-	-	-	-	$\frac{10}{16}$	"	170	"	15 "
"	-	-	-	-	$\frac{11}{16}$	"	165	"	20 "
"	-	-	-	-	$\frac{12}{16}$	"	160	"	25 "
"	-	-	-	-	$\frac{13}{16}$	"	155	"	30 "
"	-	-	-	-	$\frac{14}{16}$	"	150	"	35 "
"	-	-	-	-	$\frac{15}{16}$	"	145	"	40 "
"	-	-	-	-	$\frac{16}{16}$	"	140	"	45 "

Garboard strakes, and all plates and angles at the bow and stern, where they are required to bend to a greater angle than above named, to do so without fracture.

The extra cost of the iron to bear these strains would be about 3 *l.* per ton, and 2 *l.* per ton on the gross tonnage of the ship.

I have, &c.
(signed) *William H. Bisset.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 22. —

(M. 7004.)

Mr. *Herriot*, Shipwright and Engineer Surveyor, Liverpool.

Custom House Arcade, Liverpool,
6 May 1875.

Sir,

In accordance with M. 4764 attached, relative to the clause proposed by Mr. E. J. Reed, C.B., M.P., to be introduced into the Merchant Shipping Bill now before Parliament, wherein it is stated that all iron used for the purpose of ship-building shall be subject to a certain test previous to being used for the aforesaid purpose, I have the honour to report as follows:—That in my judgment the enforcement of the proposed clause will very materially affect the manufacture of iron, and increase the cost of ship-building, I would say, at least, 10 per cent.

With regard to the increased security to life and property at sea through the introduction of the said clause, I have no doubt but it will tend toward that end, although, in my opinion, not to the extent anticipated by the honourable Member. There is no doubt but that there are cases where very inferior iron is used in ship-building, although these cases are, in my opinion, not so numerous as the public are led to believe they are; all ship-builders are not dishonest, and the most of respectable shipowners already insert a clause in their specifications binding the builder to put iron into their vessels that will stand a certain bending and tensile strain.

Should this clause become law, it will be simply transferring the power to the Government that the owner now holds. If a test is to be enforced, every plate must be subjected to it, otherwise there will be no difficulty in evading the law.

In short, I am opinion that if this clause becomes law, it will be most prejudicial to trade, and will not work well in every-day practice.

I have, &c.
(signed) *Geo. Herriot.*

The Assistant Secretary,
Marine Department, Board of Trade,
London.

— No. 23. —

(M. 7052.)

Mr. *Loxdale*, Shipwright and Engineer Surveyor, Liverpool.

Custom House Arcade, Liverpool,
Sir, 7 May 1875.

In reference to M. 4764, respecting the clause proposed to be introduced by Mr. Reed in the Merchant Shipping Bill now before Parliament, I have to report that it is my opinion that a Government test would have a tendency to improve the manufacture of iron, but would lead to a cost of about 10 or 12 per cent. more than at present.

I do not think that it would materially add to the security of life and property at sea.

I am informed that many shipowners insert a clause in their specification to have the iron used in the construction of their vessels subject to a tensile and bending strain, and as they have some one on the spot to superintend the work constantly, I think it would be better left to them, unless the Government was prepared to have some competent person superintending every ship that was being built.

I also think it would be a matter of great difficulty to prevent evasion by unprincipled builders, and would unnecessarily interfere with those who were honest ship-builders.

I have, &c.
(signed) *G. H. Loxdale.*

The Assistant Secretary,
Marine Department, Board of Trade,
Whitehall Gardens.

— No. 24. —

(M. 7431.)

Mr. *Traill*, Chief Surveyor for the United Kingdom.

St. Katharine's Dock House,
Sir, 13 May 1875.

In compliance with the Board's desire contained in M. 4764, in reference to a clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, I have the honour to submit my opinions as follows, viz.:—

I think this clause, if always used for the purpose for which it is intended, would improve the quality of the iron for ship-building purposes, as shipowners who are anxious to promote a legitimate trade will find it more profitable to have vessels of light scantling, and consequently larger carrying power.

Having vessels of equal strength to the present ones, but of less weight, would, I think, tend to promote greater safety to life and property at sea, as they would be more profitable, and hence less inducement to overloading.

Again, assuming that the tests were reliable, and that the vessels whose plates, &c., were not tested, were equal in quality to the others, I think a great benefit would arise from the circumstance, that if the quality were improved, the range of qualities from the best to the most inferior would probably be reduced, hence all calculations would be nearer the truth than at present, and greater security to life and property would follow.

The cost of the ship or machinery would remain almost constant, if the dimensions were reduced in the same ratio, as the strengths are increased, and such a result would, I think, follow, as in all probability shipowners would demand a reduction of the scantling, and it would be difficult to find a reason for not granting their request in the case of similar vessels which are strong enough now but built of inferior material.

The good to be derived from this clause, rests on the assumption that the

pieces selected would be honestly made, and that the iron of vessels not tested would be of equal quality to those tested, for unless this object is attained, the clause would probably do as much harm as good; as the results of the tests would become known to the public, and especially to designers and others interested in the strengths of vessels, and these results would be taken as the standard of quality for many ships, and a high quality would be assumed by the designers and others in all cases, when in reality the vessel might be made of very inferior material if the owner thought proper to do so; hence the vessel would assume a false character, and the Board of Trade Officers, the Register Societies, and the public would be deceived.

If a high quality of iron were assumed in every case when such a condition did not exist, the designer's calculations would be farther from the truth in many cases than with the present system, where a medium quality is assumed; hence greater danger would arise to the public and to property.

From a shipowner's and a national point of view, it is highly desirable that the material of which a vessel is built should be first class, so as to reduce her own weight, and thereby increase her carrying capacity, but as far as safety of life and seaworthiness are concerned, it does not matter much what the quality of the material is in a vessel, so long as we know what we are dealing with, and vary the scantling accordingly.

This view of the case is to some extent proved by the use of different qualities of wood for ship-building, which are each equally trustworthy when their strength and other properties are known, and I fail to see why iron should not be treated in a somewhat similar manner. The only difficulty in the case of iron is in arriving at a knowledge of its quality, which at the present time varies as much as that of timber. At the present time this is obtained by actual tests, and if it is to be obtained in the future it must be done in the same way, and if they are to be of any value, they must be carefully made, and the party who selects the samples must not have any pecuniary interest in the results. If this course is actually necessary, it at once points to the Government Officers as those who should be entrusted with this duty; and under their care and direction, I think such an arrangement could be made so as to ensure a simple and reliable system of tests being conducted without serious interference to the manufacturers. If reliable tests are necessary for ships' plates, it is quite as necessary for boiler plates, &c., for the same argument holds good in both cases, and I think equally good results would follow.

In conclusion, I must state that before giving a final opinion in favour of, or against, the clause, I would like to know what the tests are to be, and the regulations as to the tests, as on these points depends the value of the clause. That it will lead to litigation I have no doubt, and may do good to some and cause great loss to others.

I have, &c.
(signed) *Thomas W. Traill.*

The Assistant Secretary,
Marine Department, Board of Trade,
Whitehall.

— No. 25. —

(M. 7055.)

Mr. *M'Farlane Gray*, Chief Examiner of Engineers, London.

Sir, London, 7 May 1875.

No honest shipowner requires such a clause as that proposed; it is not the ship-builder who is at the root of the evil, it is the bargain-driving shipowner who buys cheap ships, and thus creates a market for bad iron.

A respectable shipowner has no difficulty in procuring a well-built ship of good material; he has only to consent to pay the necessary price, and he can now introduce the most stringent clauses into the contract specification.

The proposed clause will not, therefore, in any way affect the position or practice of those who at present seek a good article at a fair price.

It need not affect the other class unless they choose to enforce it, but their choosing

choosing to do so will be either intimated by them in the contract specification, and the proper price paid, or their intention will be reserved until they have got their bargain made, and then they may use the power the clause will give them to get something for which they are not paying.

If the latter be their policy, the new law will be an unfair helping of the party who was most to blame in the contracting for a cheap ship. If, however, the former be the course taken, in what way will the new clause help the owner? He can now say to the builder, "I want a good ship this time, and am willing to pay the price for it, and I have therefore put certain stipulations into the specification, and my inspector shall see that you fulfil these to the letter."

If the clause is to be really a working clause, it must not make the builder, but the owner responsible; it should be that all iron used as described shall be of a certain quality, and the owner can protect himself from the builder by the means he has always had within his reach.

I do think something should be done to have the character of iron defined by the maker, and branded on each plate or bar. To get the greatest benefit from any step in this direction the operation of the plan adopted should be the simplest possible.

One kind of test only is necessary, that is, the stretching test. A piece of iron that stretches a fair amount before rupture, is fairly good iron, irrespective of a fractional difference in its measure of cohesive strength. The stretching test can be made without any expensive testing machine, and could be accomplished at any ship-building yard, for the machine that broke it does not require to be inspected, the stretch of the specimen speaks for itself.

Of two pieces of iron, one that has a great cohesive strength, say 24 tons per square inch, and little stretch, and another that has, perhaps, a cohesive strength only 19 tons, and a considerable stretch, I would much prefer the latter.

I am getting some experiments made now at Kirkaldy's works in this direction, to satisfy myself on some points; if the result is good I will communicate it to the Board.

I am now scheming a balance for getting directly the specific gravity of specimens of iron. If the difference of specific gravity can be easily ascertained, it is by far the simplest and readiest way of testing the quality of iron.

I am, &c.

The Assistant Secretary, (signed) *J. M'Farlane Gray.*
Marine Department, Board of Trade.

— No. 26. —

(M. 7763.)

Mr. *Carlisle*, Shipwright and Engineer Surveyor, London.

St. Katherine Dock House, Tower Hill,
Sir, 20 May 1875.

With reference to the Board's questions regarding the clause relating to the test, &c., of iron for ship-building purposes proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, I beg to report that in my opinion such a clause, if strictly carried out, would tend to raise the price of iron intended for ships' use, and also the price of ships, but not in the same ratio, as it is highly probable they would be built of lighter scantling and more scientific bracing; and I do not think that the clause would tend much to the greater security of life at sea, as inherently weak ships are the exception and not the rule now, and however strong it may be possible to build a ship, it must be remembered that they are intended for sea service, and not for running ashore; and when a ship is strong enough to withstand, in her worst position, the roughest weather she is likely to encounter, all additional weight in her structure means loss of cargo and loss of money to her owner.

However strictly the duty of testing the iron and watching the construction of a ship was attended to, it is quite possible bad iron might now and then creep in; but the clause would certainly have a beneficial effect as far as the quality

of the iron used is concerned; and I think, if properly looked after, it could be made to work very well in every-day practice. I think such a clause is both necessary and desirable, for after a short time the strength of the iron by various makers would be known by the test, and then, if the makers were compelled to brand their plates, &c., by using the minimum strength of the iron, the strength of the ship could be much more accurately ascertained than at present. This would be very desirable in cases of unseaworthiness, courts of inquiry, &c.

I have, &c.
(signed) *Geo. Carlisle.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 27. —

(M. 6847.)

Mr. *Gibson*, Shipwright and Engineer Surveyor, London.

Sir, St. Katherine Dock House, 5 May 1875.

My opinion respecting clause headed "Test of Iron," and in compliance with (M. 4764),—

1st. That it would not improve the quality of iron, as there is at present a sufficient number of brands, fit for making good ships.

2nd. It would considerably increase the cost of ships and machinery, and cause delay and contention between builders and owners.

3rd. In my opinion the quality of iron matters no great deal as long as the present style of workmanship is used in two-thirds of the ships now built.

4th. I am of opinion it would not work well in practice.

5th. I think what is wanted is a better class of iron; such or equal to B.B.H. best, and B.B.H. best best, to be used; also persons to inspect the building that know something about iron, and how it should be fitted.

I have, &c.
(signed) *R. S. Gibson.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 28. —

(M. 6912.)

Mr. *Lewis*, Shipwright and Engineer Surveyor, London.

Sir, St. Katherine Dock House, 6 May 1875.

In reply to the Board's Minute (M. 4764), of 29th ultimo, asking for my opinion of the proposed clause by Mr. E. J. Reed, C.B., M.P., in the Merchant Shipping Bill now before Parliament, I beg to offer the following remarks :—

1. Considering that the strength of iron used in the construction of ships may vary some 40 or 50 per cent., in my opinion it must, sooner or later, be tested and its quality taken into consideration when designing a vessel, not only for calculating her scantling, but also for arriving at a just conclusion as regards her safe load.

2. Granting that such a test is essential, or at least very desirable, what effect would it have upon the manufacture and cost? I think that there can be very little doubt its effect upon the manufacture will be beneficial. Makers will be stimulated to produce a better article, and I do not think that in the long run prices will be greatly enhanced.

3. How would such testing work in every-day practice?

As Mr. Reed's clause now stands, I do not see how it can be put in force. Supposing the iron used in the construction of a vessel is tested and found not up to the standard and the vessel rejected, what is to become of her; is she to be considered unseaworthy? The only feasible plan that occurs to me is for the Board of Trade to undertake the testing of the material used in all iron ships to

to be built in this country in future, and, in doing so, I would adopt the following, or some similar method. When the vessel is in frame and plated, but before riveted, the builder to give notice to the surveyor to attend. The surveyor should then select certain plates and angle iron for testing, and the strength of such iron to be indorsed on the vessel's register. This would help to indicate the character of the vessel, and be a guide to all parties in judging her capabilities.

I have, &c.
(signed) *Edwd. Lewis.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 29. —

(M. 7372.)

Mr. *Wheatley*, Shipwright and Engineer Surveyor, London.

Sir, St. Katherine Dock House, 12 May 1875.

I HAVE the honour to reply to your letter (M. 4764), enclosing a copy of a clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament.

I am in favour of the proposed test, as I think the effect of such a clause would be to secure a better quality of iron generally for shipbuilding, with very little additional cost, on either the manufacture of iron or on ships, when such iron or ships are intended to be first class, or on the machinery for the same.

I think the tendency of such a clause would undoubtedly be to add to the security of life and property at sea, but I doubt without proper inspection it would attain the desired end of ensuring that good iron alone would be used in ships, but with proper inspection, tests defined, as to tensile and bending strains, and per cent. of plates, frames, &c., to be tested, I think it would work well.

I think generally such a test is both necessary and desirable to stop the use of inferior iron in all cases where good quality is assumed to be put in.

I have, &c.
(signed) *W. C. Wheatley.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 30. —

(M. 7368.)

Mr. *Samson*, Shipwright and Engineer Surveyor, London.

Sir, St. Katherine Dock House, 7 May 1875.

IN reply to your letter (M. 4764), in reference to a clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, I have the honour to express my views as follows:—

1st. If the selection of the pieces to be tested were honestly made, this clause would no doubt improve the quality of the iron, assuming that the standard of quality adopted were higher than the quality in use at the present time.

2nd. The cost of the iron per ton would be increased, thence the cost of the ship or machinery would also be increased, but if the weight were reduced in the same ratio as the strength would be augmented, the cost would remain almost a constant.

3rd. I do not think it would add much to the security of life and property at sea, as it is highly probable that the Register Societies would at once reduce the scantling to suit the increase in the strength of the material, for unless they adopted this course, they would be publicly admitting that their former rules were wrong.

 4th. I do

4th. I do not think it would ensure good iron being used in all cases, as many vessels are built as a mere speculation, and it would be to the interest of the owners of such vessels to get them built of an inferior quality of iron, it being cheaper. Of course such owners would not have any genuine tests made, hence the quality of the iron would be assumed as up to the standard; or a dishonest owner might even go farther, urged on by the prospect of gain, as all he would require to do to make his vessel appear as a first-class ship, would be to select a few samples of the best iron in his vessel, and send them to the Government tester, who would find them first class, and no doubt issue a certificate accordingly, which the owner would take good care to use to advantage when classing, insuring, or selling his vessel. This piece of deception could easily be done, while at the same time $\frac{99}{100}$ths of the vessel could be made of very inferior material, and the Government would be partially assisting him in his fraud. This section of the clause is so loose that I fear the whole clause would do more harm than good.

5th. I do not think this clause would work well in practice, as the effect of throwing a large vessel on the builder or ironmaker's hands, would be disastrous in many cases, in fact, it would mean bankruptcy. As the vessel's character would be so injured as to render her difficult to sell, as no doubt the Register Societies would demur to granting the class for which she was intended, or the Board of Trade officers, who might be deputed to fix the load line, would take her character into consideration, and reduce her carrying capacity accordingly. This last result must follow, as no one can with justice fix the load line of any vessel, unless the strength of the hull is first ascertained. The hardship or injustice of this clause would rest in the fact that this vessel would be handicapped against other vessels that might not be a whit better, or in many cases worse, simply from the fact that the material of which they were built was not tested.

6th. I think it is highly desirable that tests of material should be made, for without them a great deal has to be assumed, and an amount of uncertainty exists, which to my mind is discreditable to a great manufacturing country like Great Britain, but if tests are necessary it is equally important that they are trustworthy.

The present method of fixing the scantling of vessels is based to a large extent on assumption, as the designer fixes the dimensions of the scantling to suit the size of the vessel, and *assumes* a certain strength and quality for the iron. The Board of Trade and the Register Societies do likewise, and from this heap of assumptions the public *assume* that *the vessel* is perfectly safe, when in reality it may be nothing of the kind.

This system would not do much harm if iron did not vary in quality, say more than 5 per cent., as the usual margin of safety would cover it, but we know that it often varies as much as 50 per cent., an amount which often swallows up all the supposed surplus strength which we *assumed* existed, and leaves the ship on the point of fracture.

As an example of the evil of not knowing the quality of the iron in our vessels, I will take a case in point, say two vessels of equal size and scantling, one being made of the best iron, and the other of the most inferior, or say half the strength of the best one. If the former one got reduced from corrosion to half the original dimensions, the ship would no doubt lose her character, and would probably be condemned as unseaworthy, while the latter of exactly the same strength would retain her reputation as seaworthy, and her crew and passengers would sail in her with the utmost confidence, while in reality the two vessels were of equal strength and seaworthiness.

7th. Although tests of iron and other material are actually required, I think it is not desirable or necessary that a certain standard of quality should be fixed, as all that designers, owners, Register Societies, insurers, and the Board of Trade require, is to know the value of the material with which they are dealing, and the scantling or the load line can be fixed accordingly. There are many sound wooden vessels equally as seaworthy as iron ones, although the strength of wood per square inch of sections is small in comparison to iron. This result is obtained simply by increasing the section of the wooden vessel by about the same ratio as the strength of the material is less than the iron.

Were

Were a high standard of quality for iron fixed, I cannot see why a high standard for wood should not be fixed also, and that oak alone should be used for wooden vessels, or even to go a step farther, and prohibit the use of wood altogether, simply because it is not as strong as iron per square inch of section. As this would be absurd in reference to wooden vessels, I think it equally absurd in reference to iron ships. I have already pointed out that reliable tests are much required, and it only now remains to plan a scheme that will attain that object with the least inconvenience to all parties concerned. The two following plans have occurred to me as likely to fulfil the desired object (although they are given in their crude state), and I humbly submit them for the Board's consideration.

First Scheme.

I would appoint the principal Board of Trade Surveyor in each port as the selector of the samples to be tested, with power to mark and forward them to the tester. The samples to be selected would be two half frames and two plates, the frames to be taken at random before the plating of the vessel is commenced. After all the plating is in position, the officer appointed would select one plate from the bottom and another from the sides of the vessel, and have them forwarded to the tester, who would test them for their tensile, bending, and crushing properties. The results of the test would be entered on the certificate of registry as the quality of iron of which the ship is made. The cost of the tests would fall on the owners of the vessel at the time they were made. This plan would not be difficult to work, as all the delay due to this system would be the time necessary to cut out two plates, and in substituting others. The advantages of a test of this kind would be as follows:—

1st. The Board of Trade, the Register Societies, the underwriters, and all people interested would have a reliable test, and a fair idea of the quality of the material in the hull of the vessel, as the builders would take care to keep the quality uniform throughout.

2nd. It would have a tendency to raise the standard of quality, and as owners who intend to sail their vessels endeavour to get them as light as possible, and as the tests would be reliable, the Board of Trade officers and the Register Societies would be quite willing to reduce the scantling, if the strength and other qualities were improved.

3rd. As the quality is improved the range between the maximum and the ordinary qualities is reduced, hence greater uniformity will exist.

4th. If greater uniformity of quality exists, the calculations of the designer will be nearer the truth than at present, even assuming that the actual quality is not known, hence greater security for life and property.

5th. The buyer of the vessel could insert a clause in the specification, that unless the Government test showed a certain quality of iron, he would be entitled to receive compensation from the builder, the amount to be settled by arbitration at the builder's expense. The builder would, of course, insert a similar clause in his specification with the iron maker.

6th. The Register Societies would, no doubt, improve the class of a vessel if they found better material in her than they assumed in their calculations, and, on the contrary, if they found worse material they would refuse her the class they first assigned to her. Of course the Court of Arbitration would take this point into consideration in awarding compensation to the owners.

Second Scheme.

1st. I would have all the material used in the construction of every British ship, her machinery or her equipments, marked or branded by the manufacturer with his name and trade mark.

2nd. I would give the Board of Trade power to send their representative into any ship-building yard or engine factory in the United Kingdom, to select samples of the iron or other material for the purpose of having them tested.

3rd. The samples selected would be taken from the ship or machinery under construction, and would then be sent to the official tester, who would test them

for tensile, bending, or crushing strains, as the case may require; after which he would send his report to the Board of Trade direct.

4th. The Board of Trade could then publish weekly or monthly the results of the tests, along with the manufacturer's name, and the brand on the samples tested. By making the tests public in this manner, it would have a tendency to raise the standard of material, as makers of bad material are always afraid of publicity, and what would be of more importance, it would give designers reliable data when they knew the maker's name or the brand on the material. It is not of so much importance that the highest quality of iron is used, as it is to know what is the quality of the material we are dealing with; this is proved by the use of wood for ship-building; as every one knows that a wooden vessel is as safe as an iron one, if sufficient thickness is given to the wooden one to compensate for the difference in strength per square inch of section. However, it is highly desirable to have a good quality of iron in our merchant vessels, as it is stronger and more elastic, and as they could be made lighter they would consequently be more profitable, and hence less inducement to overloading.

5th. One officer would be sufficient for selecting samples, as it would only be necessary to visit each ship-yard or engine factory at intervals, but the intended time of visiting would only be known to the Board of Trade, who would control all his movements and give instructions in each case.

The above is a scheme which, I think, would work well and one that would not be difficult to carry out in practice, as the necessary information required by the Board before fixing on any ship or machinery, could be got from the local surveyors or from the selector while going his rounds.

There might be a slight difficulty in getting manufacturers to stamp and mark with their name all material for ships' use manufactured by them, but I think it could be got over by the following plan.

If the officer for selecting the samples found them without the name and brand of the manufacturer, he would have them tested as usual, and instead of the manufacturer's name appearing in the official report, the name of the engineer or shipbuilder in whose works the samples were taken would be substituted, along with a note giving the reason for so doing.

The Board of Trade should have no power to vary the tests after they are once determined, without an Order in Council.

I am, &c.

The Assistant Secretary, (signed) *Peter Samson.*
Marine Department, Board of Trade.

— No. 31. —

(M. 7059.)

Mr. *Turner*, Principal Shipwright Surveyor for Wooden Vessels, London.

Sir, London, 6 May 1875.

The papers which I had the honour to receive on the 30th April, in reference to the above minute, I have carefully gone through; have noted the questions therein contained, in relation to which I beg most respectfully to submit the following remarks.

I am, &c.

The Assistant Secretary, (signed) *W. H. Turner.*
Marine Department, Board of Trade.

Test not defined in the clause proposed.

As the test to which the iron is subjected is not defined in the clause proposed by Mr. E. J. Reed, C.B., M.P., which, in my opinion, should vary according to the variable uses to which the iron would be appropriated, it is difficult to say what effect the application of an empirical rule would have; but provided a fair and comprehensive test is imposed, it would, in my opinion, stop the manufacture of the worst iron now used in ships, and compel manufacturers to supply better material at a slightly increased price.

1. Effect on the manufacture.

2. Cost of iron and of ships.

In first class ships by good builders it would not increase the cost, but in the cheap or indifferent ship, the cost would be increased about 20 *s.* per ton on the weights of the plating, and 12 *s.* 6 *d.* per ton on the bar and angle iron, say at about 2½ per cent. on the actual cost of the hull, or 8 *s.* 6 *d.* per ton on the gross register.

Example:

Example: A screw steamer of 1,650 tons gross register, carrying 2,000 tons of cargo, there would be in the construction of the hull near upon 800 tons weight of iron. The increase in cost, to comply with the requirements of test over a similar vessel, but built of indifferent iron, would be as follows, namely:—

	£.
530 tons of plates at 20 *s.* per ton - - - -	530
270 tons of bar and angle irons at 12 *s.* 6 *d.* per ton -	170
800	£. 700

Hence the total increase of 700 *l.* in such a vessel, the hull of which when completely equipped would cost about 30,000 *l.*, would be 2⅓ per cent.

Again, 1,650 tons gross register, increased 700 *l.*, would give on such tonnage a rate of 8 *s.* 6 *d.* per ton.

It would have no effect on ordinary machinery, a superior class of iron being used by makers. 3. Cost of machinery.

N.B.—The labour being the principal item, both cost and risk are reduced by using a better quality of material.

It would considerably add to the safety of life and property in the worst class of vessels now trading. 4. Security of life and property.

I would think so, as it would assist those who build of good material, and perpetually worry others who persisted in furnishing a bad article (or inferior). 5. Whether it would ensure good iron alone being used in ships.

I am inclined to think it might work well in large undertakings, provided that the tests imposed be not too trying or severe, and they be made at seasonable times, otherwise evasion and serious delay must and would be the result. 6. Whether such test would work well in every-day practice without fear of much evasion.

In the lowest class of iron vessels likewise, with builders and owners who drive a speculative trade, I would say that such a test is both necessary and desirable. 7. Test if necessary or desirable.

Bending round half-inch radius, when hot, one-inch plate and under, turned lengthways of the grain, 140°; and across the grain, 110°. Remarks.

All plates should admit of bending, when cold, without fracture as follows, viz.:—

	With the Grain.	Across Grain.
1 inch - - - -	30°	20°
⅞ - - - -	40°	25°
¾ - - - -	50°	30°
⅝ - - - -	60°	35°
½ - - - -	70°	40°
7/16 - - - -	75°	50°
6/16 - - - -	80°	60°
5/16 - - - -	85°	65°
4/16 and under - - -	90°	70°

The aforenamed tests have been imposed on contractors as the Admiralty tests, but have been found to be too severe for ordinary work.

Experience has shown that some iron of first-class quality will well comply with the requirements (aforenamed) when bent hot, but failed to do so without fracture when turned cold; whereas other kinds of equally good iron will work admirably if turned when cold, but not so when hot.

6 May 1875. *W. H. Turner.*

— No. 32. —

(M. 6737.)

Mr. *Wimshurst*, Principal Shipwright Surveyor for Iron Vessels, London.

Sir, St. Katherine Dock House, 1 May 1875.

With reference to M. 4,764, I have the honour to state as under:—

1. The clause in question seems to me to be permissive only; it also places the expense of any or all tests on the shipowner or his agent; the latter probably includes the Registers; but the rights, or even mention of the Board of Trade Surveyors, are omitted.

Its effect, seeing the legal rejection of ship possible, would no doubt be to lead many of the better class of builders into using a slightly higher class iron than is used at present.

The close working builder and owner would no doubt arrange between themselves to do just as though no such clause existed.

The manufacturer of iron would consequently remain almost as at present; the increased cost of a rather higher class iron would be about 20 *s.* per ton, which would equal from 7 *s.* to 10 *s.* per ton gross register of ship. Boilers and machines would not be affected by it.

2. I should not expect therefrom, nor even were the clause made compulsory, any additional security for life or property at sea.

3. Unless it be compulsory, I think it would not ensure that good quality iron alone would be used in ships.

4. The clause being permissive only, very few would, I think, change their present customs; its evasion would consequently be the rule.

5. *Generally.*—The Registers under which vessels are built to class, and all respectable owners who may take no class for their ships, at present reserve the right to satisfy themselves, in all reasonable ways, that the iron is suitably good for its intended purpose; such tests, &c., by custom being borne by the builder. The clause proposed makes no test compulsory, but simply shifts the cost of such as are made from the builder, as heretofore, to and upon the owner, the Registers, or the surveyors; as a consequence, less tests, or in some cases no test at all, will, I think, be made, and the builder to this extent will be favoured.

I further notice that while the clause provides for legal rejection of a ship built of bad material, it omits to provide the future use or end for said ship.

I am, &c.

The Assistant Secretary, (signed) *James Wimshurst.*
Marine Department, Board of Trade.

— No. 33. —

(M. 7003.)

Mr. *Mills*, Principal Surveyor for the North East of England.

Arcade, Newcastle-on-Tyne,
4 May 1875.

Sir,

Having reference to your letter of the 29th ultimo, with proposed clause relative to the testing of iron, I beg to state that I do not think that the clause, as it stands, would fulfil all that its promoters expect of it. For instance, many vessels are built for sale and not to order, and are finished before a purchaser can be found for them. In such cases the clause could not do any good, especially with cheap builders, as there could be no guarantee that the iron had been so tested, excepting what the builder might affirm.

At the same time I believe it would have a tendency to improve the quality of the iron, simply owing to the uncertainty in which the maker would be placed as to whether his iron would be accepted or not, and also to greatly increase the price, especially at first, but I think that such increased prices would not be fully maintained. I do not think that the iron used in ships is of as low a quality as is generally supposed. But I do know that there is a great deal of bad workmanship, riveting, &c. I think the clause would at first be put into effect by a few, but it would after a time be liable to fall into disuse through tacit agreement between owners who generally want a cheap ship, and the builders amongst whom there is great competition.

I think that the best way of ensuring a good quality of iron would be to have a certain percentage of all iron used tested by public officers, but that would entail an enormous amount of labour and expense.

I am, &c.

The Assistant Secretary, (signed) *L. Mills.*
Marine Department, Board of Trade.

— No. 34. —

(M. 6925.)

Mr. *Taylor*, Shipwright and Engineer Surveyor, Newcastle.

Arcade, Newcastle-on-Tyne,
5 May 1875.

Sir,

In reply to your honourable Board's Minute 4764, dated 29th April 1875, relative to the testing of iron for the construction of ships and machinery, I think a test of iron would go far in attaining the desired security of life and property at sea, and attain the desired end of securing the manufacture of good iron also. The extra cost would be very little compared with the value of a vessel built with the good iron.

I would have all iron tested at the roll mills, and a stamp of its quality put on every piece there. No one could evade the law then, because the quality of the iron could be detected at a glance.

I am, &c.
(signed) *John G. Taylor.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 35. —

(M. 6924.)

Mr. *James*, Assistant Shipwright and Engineer Surveyor, Newcastle.

Arcade, Newcastle-on-Tyne,
5 May 1875.

Sir,

In answer to your letter of the 29th April, desiring my opinion upon the clause proposed by Mr. E. J. Reed, C.B., M.P., I beg to submit the following:

A test of the iron used in ships would materially increase the cost, and owing to the great price of labour in this country, British shipbuilders will soon be placed at some disadvantage with foreign competitors.

As Mr. Reed's clause would still leave it optional with the builder and owner to use the test, circumstances would often happen when it would suit both to neglect it, such as when owner and builder are joint owners, or when ships are in great demand and paying well, or when vessels are built on speculation; and I have not seen so much anxiety evinced by shipowners, to get good iron and workmanship put into their ships, as would warrant the belief that the object of greater security of life and property at sea would be ensured by such a clause. To wait the attendance of an inspector in the yard, and ultimately to have the plates rejected, would cause loss, delay, and annoyance.

I think a test, a bending test, that would check brittleness in plates, would render vessels stronger to withstand collisions and grounding, and would result in some good. But in order that the desired end of security of life and property at sea may be obtained, the test must be made by some independent authority, and that no more loss may be incurred than necessary, the test should be applied at the manufacturers.

I am, &c.
(signed) *J. B. James.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 36. —

(M. 7668.)

Mr. *Grey*, Principal Surveyor for the South and South-west of England, Plymouth.

Plymouth, 17 April 1875.

Sir,

I think the clause, as proposed, would now add very little to the security of life and property at sea. It would seriously hamper a very important industry, and probably drive it out of this country, or lead to evasion.

I am, &c.
(signed) *H. D. Grey.*

— No. 37. —

(M. 7781.)

Mr. *Reed*, Shipwright and Engineer Surveyor, North Shields.

New Quay, North Shields,
21 May 1875.

Sir,

I BEG most respectfully to submit, in answer to your honourable Board's inquiry, that iron manufacturers should be compelled to stamp every plate and angle bar which is used in the construction of iron vessels; and that any plate or angle bar might then be tested to the tensile strength stamped thereon, to the satisfaction of the surveyor.

This would, in my opinion, ensure, as a rule, a better class of vessel, and would not cause any delay or inconvenience to the shipbuilders.

Common quality rivets and the piece-work system, which is so productive of bad workmanship, cannot be too highly condemned.

Apologising for not obeying the Board's order before, through a flush of work.

I am, &c.

The Assistant Secretary, (signed) *Henry W. Reed.*
Marine Department, Board of Trade.

— No. 38. —

(M. 6997.)

Mr. *Vercoe*, Shipwright and Engineer Surveyor, Sunderland.

Sir,

IN answer to letter (M. 4764,) I respectfully beg to express my opinion that a test for iron used in the construction of vessels is very desirable, for it is impossible to know the quality of the iron by mere inspection; but unless the test is very low I believe it would add very much to the price of the vessel. If this clause were inserted into the Merchant Shipping Bill, it is doubtful if any improvement in the quality of the iron used in the construction of ordinary vessels would be made; for as long as the iron will stand the amount of working to bring it into the shape required, both owners and builders, to save expense and delay, would decline the test. First-class owners and shipbuilders will, no doubt, approve of this clause, as the builder, by charging more per ton for the vessel to meet the extra price per ton charged by manufacturers, and by holding the manufacturer responsible for the quality of the iron, the owner would thereby obtain a first-class vessel. This question, I think, should be settled by the builders and owners of the vessel, for if the owners are prepared to pay the price for good iron to be used in the construction of their vessels, builders would, I think, be ready to meet their wishes.

The iron used in the construction of engines and boilers should stand a test far in excess of plates used in the construction of vessels.

I have, &c.

The Assistant Secretary, (signed) *Jas. Vercoe.*
Marine Department, Board of Trade.

— No. 39. —

(M. 5471.)

The Aberdeen Local Marine Board.

Local Marine Board, Aberdeen,
9 April 1875.

Sir,

I AM directed by the Local Marine Board of this port, to acknowledge receipt of your letter (M. 4764), dated 30th March 1875, along with copy of clause proposed to be inserted in the Merchant Shipping Bill now before Parliament, relative to the testing of iron to be used in building iron ships and machinery, and requesting the opinion of the Aberdeen Board on the subject.

I am

I am directed to inform you that the Board, having considered the proposed clause and the letter of the Board of Trade, are of opinion that all iron to be used in the construction of iron ships and machinery should be subjected to a uniform minimum tensile and bending strain, to be fixed by competent practical experts; care being taken that all iron so used be rather of a malleable than of a brittle quality; and that it be sufficiently strong for the size of the ship and the requirements of the machinery into which it is to be formed.

I have, &c.
(signed) *James F. Kellas.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 40. —

(M. 5938.)

The Belfast Local Marine Board.

Mercantile Marine Office, Belfast,
16 April 1875.

Sir,

I AM directed by the Local Marine Board to acknowledge the receipt of your letter (M. 4764), dated 30th March last, calling for their opinion as to a proposed clause in the Merchant Shipping Act, relative to the quality of iron used in the construction of ships and the necessity of testing the same.

In reply, I am to state that in the opinion of this Board the clause, as proposed by Mr. Reed, would be of no use. In the first place, it is only optional to test the iron, and would therefore be avoided by the very people it is intended to reach; and secondly, we believe, it has been found by experience, that the iron is never worse nor even as bad as the workmanship.

In this Board's opinion, the testing of the iron would not improve the quality of the ships, and the interference with builders and owners would be both troublesome and mischievous.

I am, &c.
(signed) *Albert Dent.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 41. —

(M. 5287.)

The Bristol Local Marine Board.

Bristol, 7 April 1875.

Sir,

I AM directed by the Local Marine Board of this port to state to you, for the information of the Board of Trade, in reply to your letter to me of the 30th ultimo, that the Local Board is of opinion that the effect of the Clause 28*a* proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament would be: 1st, to improve the quality, and in consequence increase the cost, of iron used in such ships as referred to in such clause; but to what extent such increased cost would be, this Board cannot say; 2ndly, to add to the security of life and property at sea; 3rdly, that it would be likely to attain the desired end of ensuring that good iron alone is used in ships; 4thly, that it would work well in every-day practice without fear of much evasion; and generally that such a test is necessary and desirable.

I am, &c.
(signed) *Henry Brittan.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 42. —

(M. 5294.)

The Cork Local Marine Board.

Local Marine Board, Cork,
Sir, 6 April 1875.

In reply to my Lords' letter, (M. 4764), dated 30th March last, I am directed by the Local Marine Board to inform you, that in their opinion such a clause would not materially affect the manufacture and cost of iron, and of ships or machinery, while it would tend to add to the security of life and property at sea, as well as be the means of ensuring that good iron only be used in ships, and that it would work well in every-day practice without much evasion, and that such a test is necessary in so far as that it will ensure the shipowner that he is having a ship constructed from a material of fair quality.

I am, &c.
(signed) *Charles William McDermott.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 43. —

(M. 5771.)

The Dublin Local Marine Board.

Office of Local Marine Board,
Sir, Custom House, Dublin, 12 April 1875.

I am directed by the Local Marine Board to inform you that at their special meeting held this day, your letter (M. 4764, of 30th March 1875), relative to a clause providing for the testing of iron supplied to any person for the purpose of shipbuilding, proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, was taken into consideration. I am to state it is the opinion of this Board, that such a clause would add to the security of life and property at sea, and would be likely to attain the desired end of ensuring that good iron alone is used in ships, provided the test is applied as the vessels are in the course of construction.

I am, &c.
To the Assistant Secretary, (signed) *Benjamin P. Dickinson.*
Marine Department, Board of Trade.

— No. 44. —

(M. 5292.)

The Dundee Local Marine Board.

Local Marine Board, Dundee,
Sir, 7 April 1875.

I am directed by this Local Marine Board to acknowledge the receipt of your letter of 30th March, received on the 5th instant, asking the opinion of the Local Board on the points therein specified, as to the testing of iron used in shipbuilding, and enclosing a clause proposed by Mr. Reed, M.P., to be introduced into the Merchant Shipping Bill on that subject.

In reply, the Local Board direct me to state the following as their opinion on the points submitted :—

1st. That the power proposed to be conferred would have the effect of securing generally a good quality of iron ; but it might also have the effect of raising prices.

2nd. If

2nd. If the effect is the introduction of a good quality of iron, it must necessarily have a direct and important influence in the saving of life and property.

3rd. There can be no doubt that the law would secure to a great extent the uniform use of good iron. There might be some practical difficulties, but the matter is of such importance as to be worthy of a trial.

Finally, the local board is of opinion, that while the law might be evaded at times, the check that would be placed on the use of bad iron is such as to render the power of testing and rejecting it highly desirable.

I have, &c.

Assistant Secretary, (signed) *G. Jack.*
Marine Department, Board of Trade.

— No. 45. —

(M. 5295.)

The Glasgow Local Marine Board.

Local Marine Board, Glasgow,

Sir, 6 April 1875.

I AM directed by the deputy chairman to acknowledge receipt, on 5th instant, of your communication of 30th March last, enclosing copy of a clause proposed by Mr E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, and stating that the Board of Trade desire this Board to acquaint them what effect such a clause would, in the opinion of this Board, be likely to have on the manufacture and cost of iron, and of ships and machinery; how far it is thought it would add to the security of life and property at sea; whether it would be likely to attain the desired end of ensuring that good iron alone is used in ships; and whether it would work well in every-day practice without fear of much evasion; and generally, how far such a test is necessary or desirable; and I am directed to state in reply, that, as a general rule, it is believed that exceptional interference with the ordinary course of trades on the part of the Government is much more likely to do harm than good, and, in the case in point, the shipowner and the shipbuilder are quite able to look after their own interests, and in so doing, will necessarily protect those of the public.

I have, &c.

The Assistant Secretary, (signed) *J. Mairhead.*
Marine Department, Board of Trade.

— No. 46. —

(M. 5472.)

The Greenock Local Marine Board.

Local Marine Board, Watt Place,

Sir, Greenock, 9 April 1875.

AT a meeting of this Board held on the 7th current, your letter of 30th ultimo, with the accompanying draft proposed clause for the Bill for amending the Merchant Shipping Acts, was read, and I was directed to inform you that this Board declines to offer any opinion on the subject of testing iron for ships, and at same time thinks that such matters should be left to the contracting parties, who, as a rule, make their own agreements for testing.

I am, &c.

The Assistant Secretary, (signed) *Thomas King.*
Marine Department, Board of Trade.

— No. 47. —

(M. 5286.)

The Hull Local Marine Board.

Local Marine Board, Hull,
7 April 1875.

Sir,

I AM directed by the Vice-chairman of the Local Marine Board to acknowledge the receipt of your letter of the 30th ultimo, enclosing copy of a clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, and requesting the views of this Board as to the probable effect of such clause; and in reply I am directed to state that it is the opinion of this Board, that the testing of iron used in the construction of ships and in repairs, should be subjected to the test referred to in the clause proposed by Mr. E. J. Reed.

The Board consider it would tend materially towards the security of life and property, and that it would increase the cost of the iron a mere trifle.

I have, &c.

The Assistant Secretary, (signed) *H. Corlass.*
Marine Department, Board of Trade.

— No. 48. —

(M. 5357.)

The Leith Local Marine Board.

Local Marine Board, Leith,
7 April 1875.

Sir,

I AM directed by the Local Marine Board to acknowledge receipt of M. 4764 of 30th ultimo, with its enclosure, and to reply that at a meeting of the Board held here to-day, they decided there could be no objection to such a clause being introduced into Merchant Shipping Bill, as in their opinion it would improve the quality of iron used, and do not think if it did entail extra expense ship-owners would object, as it would tend to greater security of life and property at sea.

* * * * * * *

I am, &c.

The Assistant Secretary, (signed) *John Hutchings.*
Marine Department, Board of Trade

— No. 49. —

(M. 5480.)

The Liverpool Local Marine Board.

Local Marine Board, Sailors' Home,
Liverpool, W., 9 April 1875.

Sir,

I AM directed by the Local Marine Board of this port to acknowledge the receipt of your letter of the 30th ultimo, enclosing a copy of a clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, and asking the opinion of this Board as to the effect this clause would be likely to have in certain directions therein named, in the event of the same becoming law.

In reply, I am directed to forward the following opinions which were unanimously expressed upon the several points, at a meeting held yesterday:—

1st. That in the opinion of this Board, such a clause would certainly considerably add to the cost of iron, and construction of ships.

2nd. The

2nd. The joinings of the plates or the butts, being the weakest portion of the vessel, always exhibit the first signs of weakness or giving way, and therefore they are the measure of the strength, and not the plates; so that increased security of life or property could not be relied on as the result of any test of the plates. As to the frames, and all bending pieces, the use of good iron is necessitated to stand the treatment to which they are subjected during their preparation in bending, fitting, &c.; under proper supervision, the working of the plates, punching, &c., also easily detect inferior iron.

3rd. Under a compulsory Government test the iron would, no doubt, be improved, if the test were raised beyond the strength of iron at present used; but from the foregoing observations, it will be seen that this Board do not think it necessary or desirable to force a test, which would greatly interfere with building ships for British or foreign owners, and without an actual Government inspection of the ship, there would be no security that the tested iron would be used. So far as a permissive test is concerned, that can already be obtained by agreement between the intended shipowner and builder.

I am, &c.

The Assistant Secretary, (signed) *Geo. Beall.*
Marine Department, Board of Trade.

— No. 50. —

(M. 5481.)

The London Local Marine Board.

Local Marine Board, Tower Hill, E.,
London, 9 April 1875.

Sir,

I AM directed to acknowledge the receipt of your letter of the 30th instant, enclosing a copy of a clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, and which clause had reference to the testing of the iron used in the construction of ships. The Local Marine Board took the subject into consideration at their meeting yesterday.

I am instructed to express the opinion of this Board, that, if ships are built under the survey, either of surveyors appointed by the owner, or by a classification committee, there is not much danger of inferior iron being used in their construction; or if it should be so used, there is every probability of its detection, because the inspection then made of the material while undergoing the processes of cutting, punching, bending, shearing, &c., will enable a surveyor to say if it is fit for the intended purpose or not. In many cases the process of working the iron is a better test than that applied to it when it is tested by a machine.

But all ships are not built to order, and under survey; a builder may construct a vessel, hoping to sell her when completed; or a speculative purchaser may, hoping to make a profit on completion, buy a ship at any stage of her construction, and it cannot be pretended that in either of these cases there is any great inducement to reject bad material. As Mr. Reed's clause makes the test optional, a temporary owner of a ship is not likely to make any unnecessary addition to her cost; therefore this class of ship, the speculatively built ship, which would naturally require greater attention than any other, Mr. Reed's clause will not touch. At first sight, no doubt, the proposal to test all iron used in shipbuilding will commend itself to many persons; but it by no means follows that security to life and property is thereby gained; for quite as much depends upon the workmanship as on the material, and unless good material is skilfully put together, this Board are of opinion that the result of such a regulation will be very disappointing. If interference in this form is to be attempted, it ought to go further, and steps be taken to see that not only is good material used, but that the ship is efficiently and faithfully built. That the price of iron would be increased by this proposal there can be no doubt, as extra expense must be incurred in the testing, and the risk of rejection must also be provided for. In addition to this, it appears to this Board that the clause, as it stands, would be a

fertile source of litigation between owner and builder. The former has power to reject both iron and ship; and some owners, if prices of ships were falling, might not refrain from attempting to annul their contracts on any frivolous pretexts.

On the whole, therefore, this Board consider the proposed clause unnecessary for ships built under survey; and having in view the uncertainty which at present exists regarding the best mode of dealing with ships not so built, would remark that if the shipping of this country were controlled, both as regards survey and loading, by some competent authoritative body, guided both by wisdom and experience, the necessity for Parliamentary interference with the details of a commercial contract would cease, and a gradual amelioration of the conditions which of late have caused so much uneasiness would unquestionably take place.

I have, &c.
(signed) *John Domett.*

The Assistant Secretary,
Marine Department, Board of Trade, S.W.

— No. 51. —

(M. 5293.)

The Newcastle Local Marine Board.

Local Marine Board, Royal Arcade,
Newcastle, 7 April 1875.

Sir.

I AM directed by the Local Marine Board to acknowledge the receipt of your letter of the 30th ultimo, containing a copy of a clause proposed by Mr. E. J. Reed, C.B., M.P., for introd ction into the Merchant Shipping Bill now before Parliament.

In reply I am to say, for the information of the Board of Trade, that this Board do not recognise any need for the insertion of the clause in question in the Bill. The Local Marine Board do not think that it would in any way add to the security of life and property at sea.

I have, &c.
(signed) *W. S. Whitfield.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 52. —

(M. 5289.)

The Plymouth Local Marine Board.

Local Marine Board, Plymouth,
7 April 1875.

Sir,

I AM directed by the Plymouth Local Marine Board to acquaint you, for the information of the Lords of the Committee of the Privy Council for Trade, that the Local Board has had under consideration their Lordships' letter of the 30th March, 1875, M. 4764, and copy clause proposed (by Mr. E. J. Reed, C.B., M.P.) for introduction into the Merchant Shipping Bill now before Parliament; and in reply I am to state that, whilst the Local Board is unable to reply to some of the questions put, it is the opinion of the Local Board that it is highly desirable for the security of life and property at sea, and paramount to all other considerations, that where iron is used in the construction of ships it should be tested, so as to ensure that it is of sufficient strength and quality.

I have, &c.
(signed) *John Kelly.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 53. —

(M. 5215.)

The Local Marine Board, North Shields.

Sir, North Shields, 6 April 1875.

In reply to your communication of 30th of March last, I have to inform you that, at a meeting held this day, this Board recommended that each plate of iron shall be stamped with the maker's name and address; and that in other respects the mode of inspection usually adopted by shipowners is, in the opinion of this Board, satisfactory, and does not require further provision to be made.

I am, &c.

The Assistant Secretary, (signed) *Thos. C. Lietch.*
Board of Trade.

— No. 54. —

(M. 5195.)

The Local Marine Board, South Shields.

Local Marine Board, South Shields,

Sir, 6 April 1875.

I am directed by the Local Marine Board to acknowledge receipt of your letter of the 30th March (M. 4764), enclosing a copy of a clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, and requesting the opinion of this Board as to what effect such a clause would be likely to have on the manufacture and cost of iron and of ships and machinery. In reply, I am to state, for the information of the Board of Trade, that it is the opinion of this Board, should such a clause become law, it would probably so enhance the cost of the manufacture of iron and of iron ships and machinery as to drive the trade out of this country, It might possibly add, in a slight degree, to the security of life and property at sea on English built ships; but, as the shipowner would be sure to seek to buy his ships in the cheapest market, it would not be likely to have any effect whatever on the quality of the iron used in ships that may be built abroad.

Neither would it work well in every-day practice, as it would probably lead to endless litigation between the shipbuilder and the shipowner. For the same reasons this Board are also of opinion that it is neither necessary nor desirable to give the force of law to such a test.

I am to add, that this Board strongly disapprove of all unnecessary interference with trade, but think that it would tend to improve the quality of the iron used in shipbuilding if the maker's name were caused to be stamped upon every plate, angle iron, and other detached piece of iron, intended to be used in the construction of ships.

I am, &c.

The Assistant Secretary, (signed) *John Gillie.*
Marine Department, Board of Trade.

— No. 55. —

(M. 5470.)

The Sunderland Local Marine Board.

Local Marine Board, Sunderland,

Sir, 9 April 1875.

I have to acknowledge the receipt of the Board of Trade's letter of the 30th ultimo, enclosing a clause (28*a*) as to the test of iron proposed for introduction into the Merchant Shipping Bill. 1. In reply to the inquiry, what effect such a clause would, in the opinion of this Board, be likely to have on the manufacture and cost of iron and of ships and machinery. 2. How far it would add to

the security of life and property at sea. 3. Whether it would be likely to attain the desired end of ensuring that good iron alone is used in ships; 4. Whether it would work well in every-day practice without fear of much evasion; and 5. Generally, how far such a test is necessary or desirable,—I am instructed to reply as follows:—

1. The effect on the manufacture and cost of iron for shipbuilding purposes would be increased, but not the price of iron used for machinery.

2. If capable of being fully and without evasion carried out, it would, to some extent, add to the security of life and property at sea.

3. Unless the testing were more general and complete than seems practicable, it would not ensure that only good iron would be used in shipbuilding. No shipbuilder would enter into a contract binding him to results so uncertain.

4. This Board do not think that the proposal would work well in every-day practice. Much evasion would ensue, as very different results may be obtained from the same sample of iron by exceedingly slight modifications in applying the test.

5. This Board do not consider the proposed clause either necessary or desirable.

I am, &c.

The Assistant Secretary. (signed) *Robt. Brown.*

— No. 56. —

(M. 5156.)

Messrs. *Henderson Brothers*, Glasgow.

Transatlantic, Peninsular, and Mediterranean
Steam Packet Ships,
45 and 47, Union-street, Glasgow,
5 April 1875.

Sir,

In reply to your communication (M. 4764) of date 30th ultimo, we desire to say, 1st and generally, that in our opinion any interference on the part of Government with the free course of trade, as between the producer and consumer of any staple product or manufacture is, no matter what the intentions of the Legislature may be, likely to prove, upon the whole, more injurious than beneficial to the public interest, and we would therefore strongly object, on principle, to the introduction of the clause proposed by Mr. C. J. Reed into the Merchant Shipping Bill. 2nd. The effect of such a clause (supposing the blanks in regard to "tensile strain," "bending strain," and (or) "extension," to be filled up stringently) would be to enhance considerably the price of iron used for shipbuilding purposes, without altering materially the quality of the article supplied, or adding in any considerable degree to the security of life and property at sea. Neither would it, in our opinion, be practicable, by any such Parliamentary restriction, that the grade and quality of iron specified in the Act should alone be used in shipbuilding, nor would it, we consider, be desirable to use iron of uniform quality (even were it possible to obtain it) indifferently to all and each of the multitudinous uses and purposes to which iron is applied in shipbuilding and engineering.

We have, &c.

The Assistant Secretary (signed) *Henderson Brothers.*
Marine Department, Board of Trade.

— No. 57. —

(M. 5214.)

Messrs. *Hawks, Crawshay & Sons*, Gateshead.

Gateshead Iron Works, Gateshead-upon-Tyne,
6 April 1875.

Sir,

See Enclosure.

In compliance with your letter (M. 4764) of the 30th ultimo, we have filled up the inclosed, and beg to return the same.

We are, &c.

The Assistant Secretary, (signed) *Hawks, Crawshay & Sons.*
Marine Department, Board of Trade.

(Enclosure.)

TEST OF IRON.

28*a*. WHERE, after the 1st day of January 1876, any iron is supplied to be used in the construction of any ship, or any ship is after the said day constructed of iron, in whole or in part, the person to whom such iron is supplied, or for whom such ship is constructed, or any agent or assignee of such person may, at his own expense, test at any place licensed by the Board of Trade for testing chain cables and anchors, or to be licensed for the purposes of this section, any iron so supplied or used in the construction of such ship, and shall not be bound to accept such iron or ship (any contract notwithstanding) unless the iron so supplied or used in the construction of the ship be at the least of such quality and strength as to withstand a tensile strain of 20 tons to the square inch, and a bending strain of 10 degrees, or to withstand instead of such bending strain an extension of four per cent.

Hawks, Crawshay & Sons.

— No. 58. —

(M. 5216.)

Mr. *Alfred Holt*, Liverpool.

1, India Buildings, Liverpool,
6 April 1875.

Sir,

I HAVE received your letter of March 30th, enclosing a copy of a clause respecting the testing of shipbuilding iron proposed by Mr. E. J. Reed, M.P., and asking my opinion on five questions, as to the working thereof.

These, for convenience, I rehearse, and answer seriatim.

I. What effect such a clause would be likely to have on the manufacture and cost of ships and machinery?

Any person contracting for a ship is at present perfectly at liberty to stipulate for the conditions proposed, and if he does so judiciously, and of his own accord, will probably get a somewhat more reliable vessel at inappreciably increased cost; but that a clause should be enacted enabling him, in a falling market, to repudiate a bargain is, I think, undesirable.

II. How far I think it would add to the security of life and property at sea.

I do not believe much life or property is lost by bad shipbuilding iron; according to my observation, there have been several tides of opinion and practice on this subject. In the earliest ships, very good iron was employed, and an opinion gained ground that an iron vessel was an almost indestructible structure. Confidence bred carelessness, and a flood of bad iron (ship plates) ran through the trade; good builders and good owners used it as well as others; it was the result of an opinion, that any iron would do for a ship, and was more ignorant than blameworthy. A middle opinion resulting from added experience is at present in vogue; it is in favour of an iron which tenacity is not the sole quality sought, but hardness, and somewhat of inflexibility (from a boiler maker's point of view) are recognised as the most suitable qualities for iron ships. If I read the signs of the times aright, a healthy settled opinion is growing up on this subject, which it would be a pity to disturb.

On this subject I may remark, that it has not fallen under my observation that much loss of life has at any time been distinctly traceable to the use of iron of small tenacity.

III. Whether it would be likely to attain the desired end of ensuring that good iron alone is used in ships?

I cannot prophesy the results of the clause as drawn; I fear at the time its corrective powers were most wanted they would be least likely to be applied.

IV. Whether it would work well in every-day practice without fear of much evasion?

As I understand the clause, it is only enforceable when the shipowner desires; therefore in very many instances evasion would be unnecessary, and bad iron would be used by mutual consent.

V. How far such a test is necessary or desirable?
The necessity is very slight, existent, but barely so.

The desirability of a remedy can only be declared in view of the results of its application, and I have less difficulty in giving my opinion on this point than on any of the others; I consider the proviso highly undesirable, and trust the Government will oppose it.

Yours, &c.
(signed) *Alfred Holt.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 59. —

(M. 5217.)

Messrs. *Harvey & Co.*, Hayle.

Hayle, Cornwall, 6 April 1875.

Sir,

In reply to your circular, dated 30th March ultimo, enclosing clause proposed by Mr. E. J. Reed, M.P., for introduction into the Merchant Shipping Bill now before Parliament, we beg to remark—

1st. That if the clause is intended to protect the public, the rejection of iron or ship, when the iron is found not up to the prescribed standard, should not be left to the option of the person to whom such iron is supplied, or for whom such ship is constructed; for obviously such a course would not always conduce to public good, but might be used as a lever by an unscrupulous owner to inflict a fine on the builder. If the clause is intended for the protection of shipowners, then we think it is not required.

2nd. If legislation ensues on this question, we think it would be advisable to limit the rejection to the iron only, before it is built into the ship; and not give the power to reject the ship, otherwise no builder could enter into a contract with reasonable security, and no iron-maker would become liable for the contingency involved in the power to reject the ship. Moreover, the trial of the iron should be in the hands of men independent both of the builder or owner if intended to be of any public utility; and a test, properly conducted, we think would be of public utility.

In conclusion, we think the clause might be easily evaded by collusion; and that it would in every way do more harm than good, being both unbusiness-like and impolitic.

We have, &c.
(signed) *Harvey & Co.*,
pro *Wm. Husband.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 60. —

(M. 5255.)

Messrs. *H. L. Henderson & Co.*, Glasgow.

15, St. Vincent Place, Glasgow,
6 April 1875.

Sir,

We were yesterday in receipt of your circular (M. 4764), dated 30th ultimo, and, in response to the request made, we beg to offer the following observations:—

1st. If the tensile strain upon the iron is to be by "Admiralty test," the cost of having iron so tested in the construction of ships would be fully 20 *s.* per ton gross register additional.

2nd. We do not think that such a test would have any appreciable effect in adding to the security of life and property at sea; for we are not aware of any instance in which it has been evidenced that the loss of a ship has arisen from the inferior quality of the iron, though we do not say from the inferior quality of the workmanship.

3rd. In

3rd. In our own practice, we attain the end of insuring that good iron alone is used in the construction of our ships and steamers, by specifying the makers from whom the iron is to be got, and who we know manufacture only one iron, the best; also in dealing only with such builders as would reject any piece of iron which might be found in the using to be of inferior quality, about which there is no difficulty, as iron will always evidence its inferior qualities in the using of it.

4th. We decidedly think that such a clause in the "Merchant Shipping Bill" as Mr. Reed proposes would work badly, if made compulsory, but being permissive, as we understand it, it is utterly useless. Any party can now have a ship constructed of iron tested by Admiralty test, or any other test, if he chooses to pay the builder the extra cost, and the only advantage we see in Mr. Reed's clause would be, to enable a shipowner to make a contract with a builder without specifying for the testing of the iron, and then dishonourably, by the "any contract notwithstanding" embodied in the clause, putting the iron to the test, for which he had neither agreed nor was willing to pay.

We are, &c.

To the Assistant Secretary, (signed) *H. L. Henderson & Co.*
Marine Department, Board of Trade.

— No. 61. —

(M. 5285.)

The Tyne Steam Shipping Company, Newcastle.

53, Quayside, Newcastle-upon-Tyne,
Sir, 7 April 1875.

In reply to your favour of the 30th March, which reached me on Monday only, I beg to inform you that I have consulted our Marine Superintendent, who is a practical engineer, and our opinion on Mr. Reed's proposed clause is :—

1st. That the adoption of the clause would increase the cost of ships by probably 25 per cent.

2nd. It would materially add to the security of life and property.

3rd. It would be likely to attain the desired end.

4th. It would work well in every-day practice; the same thing is done with boilers for the Admiralty constantly, and there should be no more difficulty in applying it in the one case than in the other.

Yours, &c.
(signed) *Richard Welford,*
The Assistant Secretary, Secretary and Manager.
Marine Department, Board of Trade.

— No. 62. —

(M. 5288.)

Messrs. *W. & C. C. Ringrose,* Hull.

Sir, Hull, 7 April 1875.

We duly received your letter of the 30th ultimo (M. 4764), and, in reply, we beg to say, that we entirely approve of the clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, with the simple addition of the words "or repairs," after the word "construction" in the third line.

We have discussed the matter with several of our leading shipowners here, and they agree with us, that it would very slightly enhance the cost of construction or repairs; and that it would materially conduce to the preservation of life and property at sea.

We are, &c.

Thos. Gray, Esq., (signed) *W. & C. C. Ringrose.*
Assistant Secretary, Board of Trade.

— No. 63. —

(M. 5290.)

Mr. *J. Eltringham*, South Shields.

Stone Quay, South Shields, 7 April 1875.

Sir,

I AM in receipt of your letter of the 30th ult., also the copy of clause proposed to be introduced into the Merchant Shipping Bill by Mr. Reed.

With regard to the operation of such a clause on the cost of iron, and of ships and machinery I consider it would be so enhanced as to materially effect the shipbuilding trade of this country, nor do I think it would attain the desired end of adding to the security of life and property at sea, the principal test of which would occur when the vessel got on shore, a time when the quality of the iron is of little avail.

With regard to the working of the clause, it must follow that the manufacture of iron would be very much restricted, and the trade would suffer to this extent. I may also point out, that the hard-and-fast line drawn by this clause would enable a purchaser, who found a single piece of iron unable to bear the required strain, to throw up his contract, and leave the vessel on the shipbuilder's hands.

In conclusion, I consider the clause, as it stands, impracticable; and although as a shipbuilder I am most anxious to adopt any means to improve the quality of the material I use, and to render the safety of life and property more secure, yet at the same time I consider the clause uncalled for.

I shall be glad at any time to furnish you with whatever information I am able; meanwhile,

I have, &c.

(signed) Pro *Jos. Eltringham*,
D. W. Fitzgerald.

Thomas Gray, Esq., Board of Trade.

— No. 64. —

(M. 5291.)

Messrs. *Denny & Brothers*, Dumbarton.

Leven Ship Yard, Dumbarton,

Sir, 7 April 1875.

WE have your communication of the 30th ultimo, and enclosure.

As a rule, we think permissive Acts of Parliament objectionable, and the proposed clause, in our opinion, would be useless. Owners have it at present in their power to protect themselves as to quality of iron.

As the figures for tests are not filled up, we cannot say as to how the clause would affect the cost of shipbuilding. If anything like what is known as Admiralty was to be used, it would add considerably to the cost, and we do not think such is necessary for the thorough efficiency of ships. Legislation in the direction alluded to would be harassing, and we think there would be successful attempts at evasion. To be carried out in earnestness, the Act would require to be imperative, and would lead to the establishing of a considerable addition of skilled officers to the Board of Trade staff.

We are, &c.

The Assistant Secretary, (signed) *Wm. Denny & Brothers.*
Marine Department, Board of Trade.

— No. 65. —

(M. 5296.)

Messrs. *Mark Whitwill & Son*, Bristol.

Sir, The Grove, Bristol, 7 April 1875.

IN reply to your circular letter, asking our opinion of a clause proposed by Mr. E. J. Reed, for introduction into the Merchant Shipping Bill, we beg to say we are of opinion that the effect would be to improve the quality of the iron used in the building of ships, but that it would tend to add to the cost, that it would add to the security of life and property at sea, and that although it might not

not absolutely exclude all inferior iron, it would very greatly diminish the chances of its being used.

We think the clause would be workable and be highly useful.

We are, &c.

The Assistant Secretary, (signed) *Mark Whitwill & Son.*
Marine Department, Board of Trade.

— No. 66. —

(M. 5297.)

Messrs. *Lamport & Holt*, Liverpool.

Sir, Liverpool, 7 April 1875.

In answer to your circular note, dated 30th March, but which reached us only on the 5th instant, enclosing a proposal for the introduction of a clause in the new Merchant Shipping Bill on the subject of the test of iron, we beg to say that our feeling would be against the adoption of it, not only on the general ground of interference with the freedom of trade, but that from the evidence which has appeared of late in the public prints, relating to loss of life and property at sea, nothing has arisen to show that any vessels have been lost through defective material.

That it is desirable to have good iron we quite believe in and advocate, for in all our contracts we specify that the iron of which the ships are constructed shall be able to meet a certain test, and this course is open to every other shipowner to adopt if he pleases. We think the introduction of such a clause would be of little avail, and would throw a vast expense upon the shipowning class, who would be required to support an army of surveyors for no practical good, and might lead to grave misunderstandings between shipbuilders and shipowners.

At present the Registry committees require that surveyors shall examine the character and quality of iron put into vessels built under their supervision; our experience of this has been, in the few steamers we have purchased with a classification, that far worse material has been used than in those built under our own superintendence and without any classification at all.

We are, &c.

The Assistant Secretary, (signed) *Lamport & Holt.*
Marine Department, Board of Trade.

— No. 67. —

(M. 5342.)

The London and South Western Railway Company.

Steam Packet Department,

Sir, Southampton Station, 7 April 1875.

I beg to acknowledge receipt of your letter, dated 30th ultimo, and in reply thereto to state I am of opinion that the introduction of the clause referred to would be beneficial.

I think it would tend to improve the manufacture of iron, without unduly increasing its cost, and add to security of life and property at sea, and I see no great risk of evasion, or difficulty in working well in every-day practice.

I am, &c.

Assistant Secretary, Marine Department, (signed) *E. K. Corke,*
Board of Trade. Steam Packet Superintendent

— No. 68. —

(M. 5343.)

Mr. *David Rowan*, Glasgow.

237, Elliot-street, Glasgow,

Sir, 7 April 1875.

I beg to acknowledge the receipt of your circular, of date 30th March, asking my opinion in reference to a clause proposed to be introduced, by Mr. E. J.

Reed, C.B., M.P., into the Merchant Shipping Bill now before Parliament, and reply :—

1*st Question.* "What effect such a clause will be likely to have on the manufacture and cost of iron and of ships and machinery?"

Answer. The effect of such a clause would in the first instance be a source of great annoyance to shipbuilders and engineers, and would of necessity materially increase the cost of both ship and machinery. A guarantee would first of all be required from the iron maker, that the iron supplied by him would stand the specified test to be named in the Act, and which involves an additional cost due to such guarantee. It is doubtful whether any respectable shipbuilder would undertake a contract where the material was allowed to be tested after being used in the building of any ship or machinery, under the condition of the ship being liable to be rejected if the iron did not stand the stipulated test. The additional expense, and the onerous obligations entailed by this clause, would be almost certain to drive the shipbuilding and marine engineering trade from the country. As the clause stands, where any ship required a Board of Trade certificate, the assignee would become the Board of Trade surveyor.

2*nd Question.* "How far it would add to the security of life and property at sea?"

Answer. I am not aware of any ship or machinery that has given way from defective material, but frequently from imperfect design and workmanship.

3*rd Question.* "Whether it would ensure that good iron alone be used in ships?"

Answer. I do not suppose such would be the case, but am of opinion that any practical inspector would be far better able to judge of the quality of the iron by seeing it sheared, punched, worked into shape, riveted and caulked, than by any other method of testing. The mode of testing proposed would be to transfer the decision, as to whether a plate was good or bad, from the practical inspector to a mere testing clerk, who would simply record whether the plate stood the test by the machine or not.

4*th Question.* "Whether it would work well in every-day practice without fear of evasion?"

Answer. I do not think shipbuilding and marine engineering could be carried on at all in this country under the burden of such a clause in the Act, even without considering the question of evasion.

5*th Question.* "How far such a test is necessary or desirable?"

Answer. I do not think the test as proposed, either necessary or desirable, but highly objectionable.

I am, &c.

The Assistant Secretary, (signed) *David Rowan.*
Marine Department, Board of Trade.

— No. 69. —

(M. 5372.)

The Barrow Shipbuilding Company, Barrow-in-Furness.

Barrow-in-Furness, Lancashire,
Sir, 8 April 1875.

We have received your letter, M. 4764, of the 30th ultimo, with circular, referring to test of iron, and we beg to reply as follows :—

1. The effect of such a clause on the manufacture of iron would most likely be to improve the quality generally, but it would add considerably to the cost of both ships and machinery.

2. We do not think it would add materially to the security of life and property at sea.

3. Neither would it ensure that good iron alone would be used in all ships.

4. It would not work well in every-day practice, as it leaves the testing at the option of the shipbuilder and owner, who might not always agree in rejecting material, and causing each other delay and loss.

5. For

5. For this reason, while a test might be beneficial, the test clause, as it stands, is objectionable. To be worked at all, it should be worked by neutral parties, either the Board of Trade or the Registrys. The tests should be made where the iron is manufactured, and on all large lots before leaving the works. In no case should a shipbuilder be expected to take delivery of a ship's iron in his works, taking the risk and loss of having it rejected. The iron manufacturer should be responsible to the value of all iron rejected from a ship in progress of construction, and in no case could the shipbuilder be responsible to more than the same extent for quality of material.

It would be manifestly unjust to give a shipowner such power over a shipbuilder as this clause confers, and we therefore strongly object to it.

I am, &c.
(for Barrow Shipbuilding Co. Limited),
(signed) *William Fleming.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 70. —

(M. 5373.)

Messrs. *Allan Brothers & Co.*, Liverpool.

Allan Line Canada & United States
Royal Mail Steamers, 19, James-street, Liverpool,
8 April 1875.

Sir,

In reply to your circular, requesting our views with respect to the proposal that all iron used in the construction of a vessel should be subjected to a test of sufficiency for the purpose to which it is intended to be put, we beg to say that such a regulation would meet with our approval, if the standard of sufficiency were reasonable and the method of testing convenient.

We are, &c.
(signed) *Allan Brothers & Co.*

The Assistant Secretary, Marine Department,
Board of Trade.

— No. 71. —

(M. 5374.)

Mr. *William Inman*, Liverpool.

Inman Steamship Company, Limited (late
Liverpool, New York & Philadelphia
Steamship Company), Liverpool,
8 April 1875.

Sir,

I have the honour to acknowledge the receipt of your letter of the 30th March (on the 5th April), M. 4764, in reply to which I beg to enclose the opinion of Mr. Douglas Hebson, our consulting engineer, with whose opinion I fully agree. *See Enclosure.*

I have, &c.
(signed) *William Inman.*

The Assistant Secretary,
Marine Department Board of Trade.

Enclosure.

2, Victoria-square, Clifton, Bristol,
7 April 1875.

Dear Sir,

I do not think the Clause 28*a*, proposed by Mr. Reed, would be effective in promoting the security of life and property.

As a matter of experience, I believe that fewer vessels are lost through bad quality in the material used than through the want of a sufficient quantity of it, and of its judicious distribution. The clause would not admit of deficiency in quality being compensated for by increase of quantity, and it would not reach the case of vessels built expressly for sale on completion, excepting as between the builder and iron maker, between whom it would be easily evaded.

In all cases of vessels built under contract, the owner can protect himself more effectually than by means of this clause, and it would be monstrous to give power of rejection, say for a single plate, in a part which might not affect the safety of the vessel. Too much legislation which is not effective for its purpose, is much to be deprecated.

Yours, &c.
William Inman, Esq. (signed) *Douglas Hebson.*

— No. 72. —

(M. 5375.)

The London and North Western Railway Company, London.

London and North Western Railway,
Secretary's Office, Euston Station, London, N.W.,
Sir, 7 April 1875.

I HAVE to acknowledge receipt of your M. 4764, of the 30th ult., which has been laid before my directors, by whom I am instructed to say, that they do not think, if the clause proposed by Mr. Reed were adopted, there would be any additional security beyond that which now exists.

In contracting for the construction of steamers and machinery, it has always been the custom with this Company, and as my directors believe, with all other parties desirous of having good materials and workmanship, to provide in the contract for an inspection during construction, with power to reject any inferior materials or workmanship.

Now, the proposed clause being optional, it follows that parties not so caring to protect themselves would not be likely to exercise the option.

I am, &c.
The Assistant Secretary, (signed) *S. Reay*, Secretary.
Marine Department, Board of Trade.

— No. 73. —

(M. 5376.)

Messrs. *Elder, Dempster, & Co.*, Liverpool.

The British and African
Steam Navigation Company, 48, Castle-street, Liverpool,
Sir, 8 April 1875.

WE have to acknowledge receipt of your letter of 30th ultimo (M. 4764), and in reply beg to submit the following remarks :—

It is clearly the interest of shipowners that good iron, and of a quality best adapted for each particular part, should be used in the construction of vessels. At the same time, however, no difficulty is found at present in securing this with respectable builders. Such a clause as Mr. Reed proposes would, in our opinion, add materially to the cost of shipbuilding (say from 10 to 25 per cent.), as it would subject builders to the possibility of inquisitorial tests by any shipowner, should it be his interest to throw up a contract. We do not think it would lead to increased security of life at sea, as all experience shows that vessels break through the butts and not through the solid plates. Apart from this, the clause would not necessitate an improved quality of iron unless testing was made compulsory and by Government supervision; in other words, honest shipbuilders and shipowners require no such assistance from legislation, and dishonest ones would not adopt it. There are also great difficulties in carrying out such a test in detail, as it is necessary to have iron equal to a high tensile strain in deck stringer plates and sheer strakes, while in the floors less tensile strain with more rigidity would be advantageous.

We are, &c.
The Assistant Secretary, (signed) *Elder, Dempster, & Co.*
Marine Department, Board of Trade.

— No. 74. —

(M. 5377.)

Mr. *R. J. Marshall*, South Shields.

Sir, South Shields, 8 April 1875.

In reply to your inquiry respecting the clause proposed by Mr. Reed for introduction into the Merchant Shipping Act, from many years' experience as a shipbuilder as well as engineer, I do not think it would in any way add to the security of life and property at sea. I do not think it would ensure good iron being used; but builders would get certain pieces tested, and shelter themselves from responsibility under the plea that the iron was tested. At times when prices of ships were falling, owners who wanted not to take the vessels they had contracted for, would have pieces tested, and then finding some chance pieces that did not stand the test, would refuse to take their ships.

My opinion is, that it would lead to an immense amount of litigation, without any compensating benefit.

Yours, &c.

Thomas Gray, Esq., (signed) *Rob. J. Marshall.*

Marine Department, Board of Trade.

— No. 75. —

(M. 5378.)

Mr. *Henry Parry*, Newcastle.

74, Quayside, Newcastle-on-Tyne,

Sir, 8 April 1875.

I duly received your letter, M. 4764, dated 30th March 1875, referring to the clause proposed for introduction into the Merchant Shipping Bill by Mr. E. J. Reed, C.B., M.P., and asking my opinion on certain points relating thereto.

I am of opinion that this clause will have a good effect in preventing the stuff called "ship plates," as now made, being used for shipbuilding purposes; the material used in many cases being unfit for either the plating or frames, particularly the latter, of iron ships. As regards the question of cost, I believe the difference of price between good plates, that is, plates of good makers and of bad plates, seldom exceeds 7 *s.* 6 *d.* per ton; this is equal to about 4 per cent. on present prices. With reference to the security of life and property at sea, I can only remark that I have seen many cases of stranding and collisions where, if the iron had been of better quality, the damage done would have been very much reduced.

I consider if this clause were to become law, that no very general attempt at evasion would follow; but, of course, there are unprincipled shipbuilders, as in all other trades, who may do so if not subjected to a penalty.

I am, &c.

The Assistant Secretary, (signed) *Henry Parry.*

Marine Department, Board of Trade.

— No. 76. —

(M. 5379.)

Messrs. *John Hall*, Jun., *& Co.*, London.

1, New London-street, E.C., London,

Sir, 8 April 1875.

In answer to your letter of 30th ult., received yesterday, we beg to state it is our opinion the clause proposed to be introduced into the Merchant Shipping Bill, by Mr. E. J. Reed, C.B., M.P., would increase the cost of iron for shipbuilding purposes, but would scarcely affect the machinery of steamers.

If the test is faithfully carried out, the material for shipbuilding would be improved, and consequently would add somewhat to the security of life and property.

The test would not ensure good iron alone being used in ships; but no doubt

this tested iron would mainly be used in first-class ships, providing the authorised Boards of Surveyors granted a higher character to such vessels than they would otherwise be entitled to.

The test might be made to work fairly in practice, but there would be evasion Any improvement in shipbuilding material must be desirable, if it can be conveniently accomplished.

We are, &c.

To the Assistant Secretary, (signed) *John Hall*, Jun., & *Co.*
Board of Trade.

— No. 77. —

(M. 5380.)

Messrs. *Brownlow, Lumsden, & Co.*, Hull.

Steam Packet Office, Hull,
Sir, 8 April 1875

We were duly favoured with your circular of 30th ult. and its enclosure, respecting the testing of iron intended to be used for shipbuilding, and other purposes.

In reply, we beg to say, as far as ship-building is concerned, we consider some such test could be made to work well in practice, and although it would undoubtedly add somewhat to the cost of construction, we think the advantages of better material, and consequent greater safety of life and property at sea, would compensate shipowners for the extra trouble and expense involved.

We are, &c.

(signed) (pro *Brownlow, Lumsden, & Co.*),
The Assistant Secretary, *C. Smith.*
Marine Department, Board of Trade.

— No. 78. —

(M. 5401.)

The General Steam Navigation Company, London.

General Steam Navigation Company,
Chief Office, 71, Lombard-street,
Dear Sir, London, 8 April 1875.

I beg to acknowledge receipt of your circular letter, covering copy of an amendment in the Merchant Shipping Amendment Act proposed by Mr. Reed, C.B., M.P., having reference to the quality and strength of the iron used in the construction of ships.

I am desired to inform you, in reply to your circular letter, that my directors, as shipowners, see no objection to the proposed amendment, but they are of opinion it will be found of no real practical value, inasmuch as the "test" and minimum strength of the iron is not enforced by the provisions of the Act, but left to the option of the parties, thereby leaving the whole matter precisely in the same condition it is in now.

I am, &c.

(signed) *Richard Cattarns*, Jun.,
Thos. Gray, Esq., Assistant Secretary, Secretary.
Marine Department, Board of Trade.

— No. 79. —

(M. 5407.)

Messrs. *Jas. Jack Rollo* & Co.

Victoria Engine Works, Sandon Dock,
Sir, Liverpool, 8 April 1875.

In reply to your circular, received 4th inst., in reference to the clause proposed to be introduced by Mr. Reed, C.B., M.P., into the Merchants Shipping Bill,

Bill, we beg to say that, in our opinion, such a clause would materially increase the cost of iron, and consequently of both ships and machinery. Nor can we see that it would add to the security of life and property at sea, as we cannot call to mind the case of a vessel having been lost through defective iron being used. Defective construction and overloading, we consider, have much more to do with losses at sea.

In cases of hurried repairs, the clause would interfere considerably, and, we think, would constantly, and almost of necessity, be evaded, as we experience great difficulty in getting adequate graving dock accommodation in Liverpool, and besides it would be a hardship for owners to have to wait an indefinite time for tests of iron used in the repair.

We are, &c.
(signed) *James Jack Rollo & Co.*

Thos. Gray, Esq., Board of Trade.

— No. 80. —

(M. 5473.)

Messrs. *R. Stephenson & Co.*, Newcastle.

Locomotive and Marine Engine Works,
South-street, Newcastle-upon-Tyne,
8 April 1875.

Sir,

In reply to your favour of 30th ultimo (M. 4764), received 5th current, we beg to say that, in our opinion, the clause proposed by Mr. Reed for introduction into the Merchant Shipping Bill, of which you have sent us a copy, would have a good effect on the manufacture of iron for the boilers of marine engines, inasmuch as the test recommended must tend to prevent the adoption of inferior iron. We are not aware that there need be any practical difficulty in working the test.

We remain, &c.
(signed) Pro *Robt. Stephenson & Co.*,
W. H. Budden.

Thomas Gray, Esq.

— No. 81. —

(M. 5474.)

Messrs. *J. & W. Dudgeon*, London.

10, London-street, Fenchurch-street,
London, 9 April 1875.

Sir,

In our opinion the effect of Mr. Reed's proposed clause would be to make the cost, time of production, and general arrangements for producing an iron mercantile ship more difficult now without counter-availing advantages.

We do not think a saving of life and property at sea would result. The surveys of Lloyds are carefully made, and the iron used in construction is, as a rule, very good.

Every builder should have a good testing machine at the service of owner, surveyors, or builders, so that whenever doubt may arise as to quality of material it may be tested at once, and no time lost in construction.

The character of the iron master, owner, surveyors, and builders for the work they have done, seems after all the best guarantee, otherwise the Admiralty test is the only one that could be used, and as this places iron at too high a price for mercantile purposes, we are of opinion that no trade the owner could expect would pay for the increased cost which a sudden change like this would make.

We are, &c.
(signed) *J. & W. Dudgeon.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 82. —

(M. 5475.)

Messrs. *W. H. Potter & Co.*, Liverpool.

Forge and Shipbuilding Works,
Baffin-street, Liverpool,
9 April 1875.

Sir,

In reply to your letter of the 30th ultimo, enclosing copy of Mr. Reed's proposal for testing iron for new ships, we beg to say, in our opinion, the present supervision of the surveyors for classification works well, as they assist us in detecting any defect that shows in the iron whilst being worked; but we depend more on the furnace, and the bending and twisting process (during preparation for the ship's building), to discover any defect in the iron, than any other test.

We can safely say that in all cases of damage from collision, stranding, or straining that has come under our observation during the last 30 years, would not have been reduced one iota by any special test to the iron used in the building of these vessels.

We think too much legislation and interference in such matters will be fraught with unnecessary litigation and expense, and will not tend to reduce the loss of life and property at sea.

We are, &c.
(signed) *W. H. Potter & Co.*

T. Gray, Esq., Board of Trade,
Whitehall Gardens.

— No. 83. —

(M. 5476.)

Messrs. *Alfred Booth & Co.*, Liverpool.

Liverpool, 9 April 1875.

Sir,

In answer to your Board's circular of March 30th, we are of opinion that duly licensed places where a trustworthy and impartial test of iron, &c., used in the construction of steamships could be obtained by shipowners, would be of great public convenience and utility; but we have never found that minimum legal limits of strength for material have rendered work executed more satisfactory, but have generally led to dissatisfaction, and also evasion to a certain extent.

We, therefore, cannot think the second half of Mr. Reed's clause desirable.

Yours, &c.
(signed) *Alfred Booth & Co.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 84. —

(M. 5477.)

Messrs. *Geo. Smith & Sons*, Glasgow.

200, Argyle-street, Glasgow,
9 April 1875.

Sir,

We have your favour of 30th ultimo, with copy of clause proposed by Mr. E. J. Reed, C.B., M.P., for insertion in the Merchant Shipping Bill now before Parliament.

We do not see that such a clause could add to the security of life and property at sea; not being compulsory, it would only require the shipowner who was getting a ship built, to pledge himself that no testing would be required. He might say, "I want a cheap ship, and leave you, the builder, to use the cheapest iron you can get;" ships would thus be deteriorated. Taking the iron used in construction to the nearest place licensed by the Board of Trade for testing chains and anchors would be a round-about way of doing business, while any quantity large or small found defective, would vitiate the contract, according to our reading of the clause.

We would not be prepared to ask any party building for us to come under such an obligation.

Some

Some few years back Lloyds' Association abolished their then highest class of A 1, reducing the outside plating of a 1,000-ton ship one-eighth of an inch, although remonstrated with by nearly all the owners of that class in Clyde. We cannot understand how you permitted this, and the construction of five or six lower grades, say A 100, 95, 90, &c., &c., and are now taking so much trouble regarding the quality of iron.

We are, &c.

Thomas Gray, Esq. (signed) *Geo. Smith & Sons.*

— No. 85. —

(M. 5478.)

Messrs. *Papayanni & Co.*, Liverpool.

Sir, Liverpool, 9 April 1875.

In reply to your circular, M. 4764, and dated 30th ultimo, we beg to say that in our opinion there is no doubt the iron now used in the construction of steamers is not of the same good quality as that which was used some years ago, but we cannot see how the clause referred to can cure the evil.

At present those shipowners who are desirous to have a strong ship, and are willing to pay the value of such a ship, take the necessary precautions to have the iron tested, or to specify in their contracts the brand or brands, or the names of the makers of the iron to be used. But those shipowners whose object is to get as large a steamer as possible for as little money as possible, are not likely to exercise their right of having the iron tested, inasmuch as shipbuilders will provide for such an eventuality beforehand.

We think it is very desirable that better qualities of iron should be used in the construction of ships. The extra cost would not be very great, and would be more than repaid by the greater safety of ship and cargo, the saving in repairs, &c.

If a standard of quality were to be made compulsory, we think the responsibility should be placed on the shipbuilder, who has all the facilities for examining at his own yard any iron sent to him, and of returning the same to the maker if not suitable.

We are, &c.

The Assistant Secretary, (signed) *Papayanni & Co.*
Marine Department, Board of Trade.

— No. 86. —

(M. 5479.)

Messrs. *A. & J. Inglis*, Glasgow.

Pointhouse Ship Yard, Glasgow,

Sir, 9 April 1875.

We have the honour to acknowledge receipt of your letter of 30th ult., with copy of clause proposed for introduction into the Merchant Shipping Bill now before Parliament.

Our experience in building, and still more in repairing ships, leads us to the conclusion that the instances in which a ship gives way in consequence of the inferior quality of iron used in her construction, are exceedingly rare. We cannot at present recall one instance.

The proposed clause being permissive in its nature, does not ensure that good iron alone shall be used, as it may or may not be tested in the option of the builder or owner of the ship.

Under the existing laws, a shipowner or builder may provide for the iron used in a ship being tested, and this is frequently done, the extra cost of the ship thus involved depending on the stringency of the tests. That part of the clause enabling an owner to reject a ship even after her completion, on the ground that the iron had not been tested, we consider might have most mischievous results, as it may be taken advantage of by an unscrupulous owner to relieve himself of a vessel for which he found he had no profitable employment. We are of opinion that no owner or builder should be empowered by law to set aside any

contract in itself equitable, and which both parties are understood to subscribe in good faith.

We are, &c.

The Assistant Secretary, (signed) *A. & J. Inglis.*
Marine Department, Board of Trade.

— No. 87. —

(M. 5574.)

Messrs. *Flinn, Main, & Montgomery*, Liverpool.

Harvey-buildings, 24, James-street, Liverpool,

Sir, 10 April 1875.

In reply to your inquiry, we beg to say that we have joined with the other members of steamship owners in the petition relating to the Merchant Shipping Bill now in Parliament, which expresses an opinion on the question in point.

Yours, &c.

(signed) *Flinn, Main, & Montgomery.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 88. —

(M. 5576.)

Messrs. *T. Wingate & Co.*, Glasgow.

Sir, Whiteinch, Glasgow, 10 April 1875.

In reply to your circular, dated 30th March, we think such a clause would have the effect of still further raising the price of iron, and so favouring foreign competition in shipbuilding; and shipowners already have ample protection in this direction. We do not consider a high *tensile strain* necessary; it is better for shipbuilding purposes to have iron that stands *bending cold* reasonably well. We do not see how it would be *practicable* to draw a hard-and-fast line, as in one ship we often find great differences in the plates; some will stand 24 tons per inch, and others 19 tons, and so on. It is almost impossible to avoid this. The great protection is to have the iron made by responsible firms, and all properly *branded* so that a bad plate or bar can be at once returned to the proper quarter.

We do not think the proposed clause would add much, if at all, to the security of life and property at sea; in all our firm's experience of *iron shipbuilding*, extending over 40 years, we have never lost a ship through bad iron; any real defect of *consequence* is pretty sure to show itself in working the iron, and we have always found iron makers quite agreeable to take back such.

In any case the tensile strain for ship plates should not be over *19 to 20 tons* per square inch, or bending strain over 45 degrees.

We are, &c.

Thomas Gray, Esq., (signed) *Thomas Wingate & Co.*
Marine Department, Board of Trade.

— No. 89. —

(M. 5577.)

Messrs. *T. Brassey & Co.*, Birkenhead.

Canada Works, Birkenhead,

Sir, 10 April 1875.

We beg to state, in reply to your letter of 30th March, which reached us only a few days since, that the cost of building a vessel must necessarily depend upon the quality of the material and workmanship used. If a moderate strain for the iron is stipulated for, such iron is more easily obtainable, and we consider more likely to be of uniform quality.

See Enclosure.

For an ordinary quality, we consider that the figures we have named in the accompanying form, the "test clause," would be a fair one, and that any higher strains

strains than those we name would necessitate a higher quality of iron, as both in stretching power and tensile strain an excess of this to the extent of two per cent. for plates in the extension, and one ton in the tensile strain, would increase the cost of the iron by 20 *s.* per ton.

Were the tests of the iron to be higher than this, an improved quality of iron at an enhanced cost would of course be required.

For all practicable purposes, and apart from a ship grounding, we think that the ordinary quality of iron would answer well for ship building.

We are, &c.

The Assistant Secretary, (signed) Pro *Thomas Brassey & Co.*
Marine Department, Board of Trade. *J. Rodgerson.*

Enclosure.

TEST OF IRON.

28*a*. WHERE, after the 1st day of January 1876, any iron is supplied to be used in the construction of any ship, or any ship is after the said day constructed of iron in whole or in part, the person to whom such iron is supplied, or for whom such ship is constructed, or any agent or assignee of such person, may, at his own expense, test at any place licensed by the Board of Trade for testing chain cables and anchors, or to be licensed for the purposes of this section, any iron so supplied or used in the construction of such ship, and shall not be bound to accept such iron or ship (any contract notwithstanding) unless the iron so supplied or used in the construction of the ship at the least of such quality and strength as to withstand a tensile strain of 20 tons to the square inch, and a bending strain of 20 degrees, or to withstand instead of such bending strain an extension of 6 per cent.

Canada Works, Birkenhead.

— No. 90. —

(M. 5578.)

The City of Dublin Steam Packet Company, Dublin.

City of Dublin Steam Packet Company,
Office, 15, Eden Quay, Dublin,
Sir, 10 April 1875.

I HAVE the honour to acknowledge the receipt, on 7th instant, of your circular of the 30th ultimo, with copy of the clause proposed by Mr. Reed for introduction into the Merchant Shipping Bill, in reference to testing the quality of iron used in the construction of ships.

In reply to your inquiry, I beg to say that it is the opinion of the manager of this Company that the proper testing of iron is most desirable, and if made compulsory, would, no doubt, improve the quality used in the construction of ships, and conduce to the safety of life and property conveyed in them.

I have, &c.
(signed) *P. Howell,*
The Secretary of the Board of Trade. Secretary.

— No. 91. —

(M. 5579.)

Messrs. *J. & A. Allan*, Glasgow.

70, Great Clyde-street, Glasgow,
Sir, 9 April 1875.

REPLYING to the questions put to us in your letter of the 30th March (M. 4764), we doubt if any practical good would come of the clause proposed. The ordinary law that prevents a bad article long continuing to be successfully sold is a sufficient safeguard against the evils dreaded. We very much deprecate the enactment of restrictive laws in the quality of articles to be used in commerce; and we do not think there is any special reason why such restrictions, if to be applied at all, should be applied to ship-building iron only, or in particular.

Our experience points to a far greater evil in shipbuilding than the inferiority of iron, viz., to inferior workmanship; slop jobs, rivet holes not opposed to one another, plates badly fitted, strength not well distributed; these are the things which lead more frequently to weak and leaky ships than the quality of the iron used.

We are, &c.

The Assistant Secretary, (signed) *James & Alex. Allan.*
Marine Department, Board of Trade.

— No. 92. —

(M. 5620.)

The Wallsend Slipway Company, Wallsend-on-Tyne.

Sir, Wallsend-on-Tyne, 12 April 1875.

In reply to your circular letter of the 30th ultimo, we have the honour to submit below our opinions on the various points named in your commmunication.

1st. The effect of the clause in question would undoubtedly be to enhance the cost of the construction of iron vessels and their machinery to a very great extent, probably 10 or 15 per cent.

2nd. We do not consider that such a clause would contribute to "the security of life and property at sea" to any appreciable extent; for although it is, doubtless, the case that all vessels are not constructed of iron of equally good quality, yet we are not aware of any case in which the loss of either "life or property at sea" has been directly traceable to inferiority in the quality of the iron of which such vessels may have been constructed.

3rd. We do not consider such a regulation would in "every-day practice" be found to work satisfactorily, and we further hold the strongest opinion that the power it confers upon the purchaser of refusing to accept his ship, "any contract notwithstanding," if he should find any portion of the iron employed in the construction of the vessel failing to reach a required standard, would open the door to unbounded abuse, and in the hands of unprincipled persons might be made use of to the discredit and possible ruin of the shipbuilder.

Finally, we do not consider that the clause proposed is the best mode of obtaining the end aimed at, viz., the construction of strong seaworthy vessels; we should rather rely on an improved tone of public opinion, conjoined with an appreciation of the personal advantage accruing both to shipowners and shipbuilders from the use of thoroughly efficient materials of all kinds.

We have, &c.

To the Assistant Secretary, (signed) *Joseph Ward,*
Board of Trade. Secretary.

— No. 93. —

(M. 5623.)

Messrs. *Day, Summers & Co.*, Southampton.

Sir, Northam Iron Works, Southampton.

Your communication respecting a clause proposed (by Mr. E. J. Reed, C.B., M.P.) for introduction into the Merchant Shipping Bill, now before Parliament, has had our attention, and we beg to state our opinion, on the points mentioned in your circular, to be as follows:—

1st. Such a clause as that proposed would probably have the effect of limiting the manufacture of so-called ship plates, and would necessitate a "general" use of a better class of iron at an increased cost in the construction of ships and machinery, and manufacturers of iron would probably take advantage of such a clause to put a higher price on their iron.

We may mention that our firm has hitherto always used best Staffordshire plates for shipbuilding purposes, and such a clause as that proposed would no doubt work in favour of ourselves and firms of our standing.

2nd. With

2nd. With respect to the additional security to life and property at sea, we are of opinion that accidents are to be attributed as much to faulty construction as to the use of faulty material in vessels, and we believe the best safeguard to life and property would be found in its being made obligatory that all vessels should be classed and built under certain accepted rules.

3rd. We are not prepared to state that the proposed clause would have the effect of insuring the use of good iron only in ships; we are of opinion that so long as customers insist on buying cheap vessels, so long will there exist a class of shipbuilders ready to supply their wants, and therefore ready to evade any rules or regulations likely to increase the cost of construction.

4th. Lastly, we very much question the desirability of this clause being made law, for this particular reason: we presume that eventually some Government official would be appointed to see that the Act was carried out, and we know from experience that it is undesirable to place respectable firms under the surveillance of inspectors who often, through an excess of zeal, or through arrogance of power, or to satisfy personal whims or fancies, put manufacturers and the public to great unnecessary trouble and expense. We would instance the late Mr. Luke, at one time Admiralty Surveyor, who always insisted on having his own unreasonable requirements carried out in such a vexatious spirit, both to the large steamship companies and firms like ourselves, that some companies found it to their advantage to pay a large sum of money to escape his inspection.

Further, we consider that Government interference with the manufacturers of this country is already carried far enough, and tends very greatly to delay the execution of business and to increase the cost of work unnecessarily.

We are, &c.

The Assistant Secretary, (signed) *Day, Summers & Co.*
Marine Department, Board of Trade.

— No. 94. —

(M. 5624.)

The Clyde Shipping Company, Glasgow.

Clyde Shipping Company, 2, Oswald-street,
Dear Sir, Glasgow, 12 April 1875.

Since receipt of your letter of 30th ultimo, we have been making inquiry into the probable advantages to be gained by the clause proposed to be introduced by Mr. Reed, providing for testing angle iron and plates used in shipbuilding.

Our opinion is, that in nearly every contract now made the owners have a clause in their contracts securing them the power to reject any bad or doubtful iron; and this coupled with the supervision of Lloyds, and Liverpool Agents; under whose rules nearly all vessels are built; who also have the power to reject bad material, and it also being so clearly the shipowners' interest to get good value for what he is paying; we cannot see that legislation is either desirable or necessary, and hope things may be allowed to remain as they are at present.

Yours, &c.

(signed) Pro *Clyde Shipping Co.*
S. W. Kidston.

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 95. —

(M. 5625.)

Messrs. *Blair & Co.*, Limited, Stockton-on-Tees.

Dear Sir, Stockton-on-Tees, 12 April 1875.

On the 4th instant we received your circular of the 30th ultimo, enclosed with copy of clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament.

In answer to your inquiry we beg to say, that, in our opinion, if such a clause became law it would add sensibly to the cost of iron, and lead to considerable delay and annoyance to shipbuilders and makers of machinery, without being able to ensure the desired end of good iron being alone used in ships; and we are sure it would work anything but well in every-day practice, as no ordinary vigilance could prevent unscrupulous persons from evading the test by preparing special iron to stand the test, while the iron actually used might go altogether untested. On the other hand, if the iron was submitted to, and stood the test, all responsibility after that would be taken from the iron manufacturers, shipbuilders, &c.

We cannot help thinking that there would be far greater security to life and property, in holding iron manufacturers and users of iron responsible. The working of plates or iron cannot fail to show those who wish to do what is right, whether the quality of the iron is sufficiently good or not.

We have frequently known iron to fail in working after a piece cut from it had stood a pretty severe test.

In a word, we think that the passing of a law to test all iron for shipbuilding purposes, &c., would lower the general standard of iron used for such purposes, and afford those who wish to do wrong a special opportunity of doing so.

We are, &c.
(signed) Pro *Blair & Co.*, Limited,
G. Y. Blair.

Thomas Gray, Esq.

— No. 96. —

(M. 5626.)

The Peninsular and Oriental Steam Navigation Company.

Peninsular and Oriental Steam Navigation Company,
Offices, 122, Leadenhall-street, London, E.C.,
12 April 1875.

Sir,

I HAVE the honour to acknowledge receipt of your letter of 30th ultimo, inclosing a copy of a clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, and requesting to be informed as to the effect such a clause would in the opinion of the company be likely to have on the manufacture and cost of iron, and of ships and machinery, &c., for which I have to express my best thanks.

I have, &c.
(signed) *A. W. Bethune*,
Secretary.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 97. —

(M. 5665.)

Messrs. *J. & G. Thomson*, Glasgow.

Clyde Bank Foundry, Glasgow,
12 April 1875.

Sir,

WE have been favoured with your communication of 30th ultimo, relative to Mr. E. J. Reed's proposal for testing iron used in shipbuilding, and requesting our opinion on same.

We consider that the clause in question would be beneficial, under all the points of view enumerated in your letter, but much depends upon the mode of carrying out the proposed testing, and we think the following would be the most satisfactory arrangement.

We would propose that the testing of iron for shipbuilding purposes should be undertaken by Government, in the same manner as other articles under Government supervision are examined and passed, viz.: by officers resident in, and taking oversight of, a district, or locality, or establishment, wherein the manufacture of iron for shipbuilding purposes is carried on, and a brand or stamp to be employed for the different qualities of iron.

The

The result of such supervision would likely be an increased cost to the maker, who would indemnify himself by charging a higher price to the shipbuilder, who again would look to the owner to recoup him the difference, but any additional cost we think would be amply compensated by the comparative certainty of procuring a good and equal quality of iron.

We beg to add that we would consider it essential to the satisfactory working of this arrangement that there should be no intervention or responsibility of the shipbuilder so far as the testing is concerned, as any uncertainty or delay, caused by rejection of material, &c., would lead to loss and annoyance too serious to be borne by any firms so situated.

We are, &c.
(signed) *James & George Thomson.*

The Assistant Secretary,
Marine Department, Board of Trade.

—No. 98.—

(M. 5715.)

Mr. *C. R. Simey*, Sunderland.

Sir, Sunderland, 13 April 1875.

In reply to your circular inquiry (M. 4764), I have pleasure in giving you my opinion upon the advisability of introducing the test clause for iron used in shipbuilding.

In the whole course of my experience I never knew a case where a ship was lost owing to inferiority of the iron used; such cases, of course, have been discussed, but upon referring to their sections it will be found that the defect may be attributed rather to the light scantling and to the disposition of the iron rather than to its quality.

Of course this applies only to cases where ships have broken in two at sea without touching the ground. Regarding those which break when striking heavily, it is simply a matter of making the girder form sufficiently strong to prevent the possibility of such accidents; but the result would be that such a vessel would be expensive to build, and would carry very little cargo in consequence of her own great weight.

Further, I have always found that the commoner the quality of iron when exposed to sea-water the longer it lasts; keelbars, chains, shackles, &c., made of well-wrought iron perish very rapidly when immersed, while the plates which are less worked last much longer.

I have always found that there is a practical limit to the use of inferior iron for shipwork; I mean that if the iron is very bad, it will not stand punching or bending without cracking, in which case it is returned to the maker, who generally has to pay all costs incurred. According to Lloyd's rules, all the iron should be tested before any ship can receive a class; but no owner ever thinks of going to the expense of doing so, and I do not think that the 28 *a* clause would be any more attended to unless it were made absolute and compulsory.

In such cases a stronger but less durable, although more costly, iron would be used, causing a considerable increase in the prime cost as well as in the yearly depreciation of a ship. The fine iron would corrode so rapidly compared with the common, that in the course of 10 years the ship built of the latter would be much stronger than one of same dimensions built with same scantling, but of better material at the same time.

I do not think that the introduction of such a test would be of any value as a means of saving life and property, and I do not in any way consider it necessary or desirable.

I believe further that, in the course of a year or two, steel will be very generally used in the construction of our vessels.

Yours faithfully,
(signed) *Chas. R. Simey.*

To the Assistant Secretary to the
Board of Trade, Marine Department.

— No. 99. —

(M. 5768.)

The Union Steamship Company, Southampton.

Union Steamship Company (Limited),
Southampton, 14 April 1875.

Sir,

In reply to your circular letter of the 30th ultimo, I am desired to hand you the annexed answers, arranged in a tabular form:—

1. Effect such a clause would, in our opinion, be likely to have on the manufacture and cost of iron, and of ships and machinery?	1. Increase cost, but would, without doubt, be beneficial.
2. How far we think it would add to the security of life and property at sea?	2. Uncertain.
3. Whether it would be likely to attain the desired end of insuring that good iron alone is used in ships?	3. Partially.
4. Whether it would work well in every-day practice, without fear of much evasion?	4. Questionable.
5. And, generally, how far such a test is necessary or desirable?	5. We do not consider it necessary to have it made a law, as owners already act upon such principles in their own interests.

I am also to hand copy of an expression of opinion from the Company's superintending engineer as to the result of inserting the clause proposed by Mr. E. J. Reed.

I am, &c.
(signed) *E. A. Hart*, Secretary.

The Assistant Secretary,
Marine Department, Board of Trade.

I consider the clause proposed by Mr. E. J. Reed for introduction into the Merchant Shipping Bill now before Parliament would be the means of very considerably increasing the price of building iron vessels.

(signed) *Archd. Thomson*,
Superintending Engineer,
Union Steamship Company.

— No. 100. —

(M. 5769.)

Messrs. *C. Mitchell & Co.*, Newcastle.

Newcastle-on-Tyne, 14 April 1875.

Sir,

Referring to your circular of the 30th March, regarding the proposed test of iron used in shipbuilding, we beg to reply to your various queries, but must first of all point out the very great injustice of the proposal conveyed in the words "any contract notwithstanding," which would permit a shipowner deliberately to make a contract without in the first case agreeing to pay the greatly enhanced cost of production which this clause would entail (as below explained); and on the completion of the vessel, should the market value have fallen, or if the owner desired for any reason to get off his contract, it might be possible to find portions of iron which would not stand the proposed tests, thus giving him an entirely unfair advantage over the builder.

The actual tests are left blank, but they would doubtless be something near those adopted by the Admiralty

Replying

Replying to your questions seriatim, we beg to say,—

1st. In our opinion the effect of such a clause would be enormously to increase the cost of production, arising not only from the greater first cost of iron entailed, but also the uncertainty and interference with the routine of the work, and this incidentally would necessitate a much longer time for the building of vessels.

2nd. We do not think it would in the slightest degree add to the security of life and property at sea.

3rd. We do not think it would give any real guarantee that the quality of the iron used would be better than at present.

Finally. We are strongly of opinion that no sufficient cause has been shown to justify such an amount of interference with trade as this clause cannot fail to produce, and we think it will be difficult to find many well-authenticated cases where a vessel has been lost from defective iron, or where, had a vessel been constructed of a different quality of material, her safety would have been insured.

We remain, &c.

The Assistant Secretary, (signed) *C. Mitchell & Co.*
Marine Department, Board of Trade.

— No. 101. —

(M. 5770.)

The British India Steam Navigation Company, Glasgow.

British India Steam Navigation Company, Limited,
Sir, Glasgow, 13 March 1875.

In reply to your circular, dated 30th ultimo, enclosing copy of a clause proposed by Mr. Reed for introduction into the Merchant Shipping Bill now before Parliament, I have to state that this Company has had, during the last 15 years, a large number of iron screw steam vessels built for its use, principally by shipbuilders on the Clyde, and in no instance has there been occasion to complain of the quality of the iron employed in their construction.

The application of a Government test of materials would involve, in many instances, considerable inconvenience, and add to the cost of the iron, I am informed, about 1 *l.* per ton. The Company consider it has sufficient security at present against the use of defective iron by contracting for their vessels with builders of established reputation, and by the power they possess of rejecting, through their inspector, who superintends the vessel while building, any iron which may be of an inferior quality.

I remain, &c.

The Assistant Secretary, (signed) *P. Macnaughtan,*
Marine Department, Board of Trade. Secretary.

— No. 102. —

(M. 5852.)

The Royal Mail Steam Packet Company, London.

Royal Mail Steam Packet Company,
No. 55, Moorgate-street, London,
Sir, 15 April 1875.

In reply to your circular letter of the 30th ultimo (M. 4764), I am desired to state that this Company approve generally of the clause which Mr. Reed, M.P., has proposed for introduction into the Merchant Shipping Bill, with the object of ensuring that good iron shall be used in the construction of ships and machinery, but they are of opinion that it might with advantage go still further, and that all iron used in shipbuilding and machinery for ships should be required to be equal to tests suitable for the different parts of the work.

In the Company's specifications for their new ships, there has, for some years past, been a test clause, for the quality, ductility, and strength of the iron to be used, and the plan has worked well, inasmuch as the contractors have not been found attempting to evade the requirement, under the careful supervision which

the Company exercise by means of their inspectors. No doubt, however, such conditions increase considerably the first cost of a ship.

I am, &c.
(signed) *J. M. Lloyd*,
Secretary.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 103. —

(M. 6042.)

The West India and Pacific Steamship Company, Liverpool.

West India and Pacific
Steamship Company, Limited, Liverpool,
19 April 1875.

Sir,

I AM instructed to acknowledge the receipt of your letter of 30th March, and to state that the absence of our consulting engineer (Mr. Douglas Hebson, who has had a very large experience in both the building and working of steamships), whom my directors desired to consult upon certain points, has prevented an earlier reply.

After giving careful consideration to the clause proposed by Mr. Reed for insertion into the Merchant Shipping Bill, my directors are of opinion that it would only lead to embarrassment, and add another difficulty in the way of shipbuilding, whilst it could be so easily evaded that it would not afford any additional security to life and property at sea.

Shipowners can now, and do, effectively protect themselves against bad iron being used, by a clause in the building contract.

My directors are of opinion that serious injury is already being done to respectable owners by the restrictions (which are frequently positively injurious to the strength and efficiency of a ship) under which they have to carry on their business, and none but those who have actual experience of the practical application of existing laws can form a correct idea of the trouble, expense, and annoyance to which those who desire to do always what is proper and right are exposed.

I have, &c.
(signed) *Samuel Wright*,
Secretary.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 104. —

(M. 6137.)

Mr. *W. B. Thompson*, Dundee.

Caledon Shipbuilding Yard, Dundee,
20 April 1875.

Sir,

I DULY received your circular letter of date 30th ultimo (M. 4764), and in reply have to state as follows :

I am of opinion that some test, such as stated in the concluding part of Mr. Reed's clause, is much required for the iron used in shipbuilding. I consider if a more ductile iron was used it would be a great means of saving life and property ; but I would suggest that the most likely way to have the iron tested would be for the Board of Trade to appoint surveyors in the iron districts, who would see the iron tested before it was sent off to the shipbuilders, and who would be responsible for the quality.

An arrangement such as this would save an immense deal of time, trouble, and expense to the builder, which would otherwise be caused him, if the iron was sent to his yard and tested afterwards.

I am, &c.
(signed) *W. B. Thompson.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 105. —

(M. 6167.)

Messrs. *Thompson & Co.*, Newcastle.

Spring Gardens Engine Works,
Sir, Newcastle-upon-Tyne, 21 April 1875.

In reply to your circular of the 30th ultimo, we have to say that we are *not* of opinion that such a clause would add to the security of life and property at sea. It is not easy to prove a negative, but we believe there is no case, or, if one, then only a most exceptional one, where a vessel has been lost from defective iron being used.

We are not of opinion that the effect would be to cause better iron to be used than is used at present.

On the other hand, we think the expression "any contract notwithstanding" is most unjust to appear in any Act, and one that would open the door to constant litigation.

The effect of the clause would be to add materially to the cost of building vessels, and form altogether an interference with trade which is not called for by any circumstance that is before the public.

We are, &c.
(signed) *Thompson & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 106. —

(M. 6331.)

Messrs. *Hy. Briggs, Sons, & Co.*, Hull.

Princes Dock Chambers, Princes Dock,
Sir, Hull, 24 April 1875.

In reply to your communication of 31st March, enclosing copy of clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament;

We believe it is very important that the owners of ships should know the quality of the iron their vessels are made of. We also think that the strength of all the iron that is made, to whatever purpose applied, whether for hull or machinery, should have some registered brand equivalent to a guarantee or certificate from the maker, that the iron so branded would bear a certain amount of strain, then the specification for ships would contain not only the scantling but the brand of the iron the vessel was made of; it might also appear in the class or register. We do not think this would interfere unnecessarily with the manufacture of iron, or that any difficulty would arise in carrying out the system of branding iron.

We must apologise for not replying earlier, but our superintendent engineer has been away from home, and we have been waiting his return.

We are, &c.
(signed) *Hy. Briggs, Sons, & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 107. —

(M. 6700.)

Mr. *E. S. Hill*, Cardiff.

Sir, Cardiff, 1 May 1875.

I have to acknowledge the receipt of your letter of the 29th April, covering a copy of a clause which Mr. E. J. Reed, M.P., proposes as an addition to the Merchant Shipping Act now before Parliament, and asking my opinion upon certain points arising out of the same.

I have now the honour to reply, for the information of the Board of Trade :—

1st. I do not consider that the clause proposed would have any good effect; permissive legislation, in such a matter, I deem useless.

2nd. I believe a compulsory test (say, such as is required by Lloyd's) *would* have the effect of raising the price of ship-building iron considerably.

3rd. A test that would ensure the use of a better quality of iron in ship-building than is now *sometimes* used *would* add to the security of life and property at sea, more especially if combined with *improved workmanship*.

4th. A compulsory test would tend to ensure the employment of a better quality of iron in ship-building, if properly carried out.

5th. A permissive test would certainly be evaded.

The question of applying a test is fraught with difficulty, and would, in my opinion, be best met by careful superintendence while the vessel was building, as the needful manipulation of the iron is practically in itself a sufficient test; a rigid condemnation of all the plates which cracked or split whilst under the punching or bending machine would soon lead to the employment of a suitable quality.

If this cannot be undertaken by Government, then, I think, the only plan will be to insist upon a test being applied by Government inspectors stationed at the various works. I believe that bad workmanship and slight scantlings have had more to do with the loss of iron vessels than the bad quality of the iron.

I am in favour of judicious steps being taken by Government to prevent both evils.

I am, &c.

The Assistant Secretary, (signed) *Edward S. Hill.*
Marine Department, Board of Trade.

— No. 108. —

(M. 6715.)

The Uskside Company, Newport, Monmouth.

Uskside Ironworks, Newport, Monmouth,
Sir, 1 May 1875.

In reply to your communication of the 29th April, we beg to say that we think some such provision as that proposed by Mr. Reed is urgently required, although it would certainly increase the cost of ships in proportion to the severity of the test imposed. We think that the bad quality of the iron sometimes used must lead to many losses at sea, and we cannot see why the clause should not work well in every-day practice.

Yours, &c.

The Assistant Secretary, (signed) *The Uskside Company.*
Marine Department, Board of Trade.

— No. 109. —

(M. 6761.)

Messrs. *J. Wigham Richardson & Co.*, Newcastle.

Neptune Shipyard, Newcastle-upon-Tyne,
Sir, 3 May 1875.

In reply to your circular letter, M. 4764, of the 29th ultimo, we beg to say that we think the clause referred to is an unwarrantable interference with freedom of contract, and not at all likely to have any good result.

We are, &c.

(signed) For *J. Wigham Richardson & Co.*,
J. Patterson.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 110. —

(M. 6762.)

Mr. *R. H. Michell*, Cardiff.

Mount Stuart Iron Works, Cardiff,
3 May 1875.

Dear Sir,

In answer to yours of the 29th ultimo, No. 4764, respecting the test of iron clause proposed to be inserted into the new Merchant Shipping Bill, I think it would be an excellent thing (although it might raise the price of iron a little) if some practicable clause could be introduced that would have the effect of putting a stop to the use of some of the rubbish sold and used as ship-plates, such as a penalty upon the maker and user of plates that were incapable of withstanding a stated minimum strain and a certain bending strain contrary to the fibre of the iron; but to go so far as to give power to throw up a contract because a piece of iron might be found on the maker's premises not capable of withstanding the test would, in my opinion, not work at all in practice. Very few would like to take a contract under such terms.

I think the quality of the rivets equally as important as the plates, if not more so.

I am, &c.
(signed) *R. H. Michell.*

Thomas Gray, Esq.,
Board of Trade.

— No. 111. —

(M. 6765.)

Mr. *E. Crawshay*, Gateshead.

Gateshead Iron Works, Gateshead-upon-Tyne,
3 May 1875.

Dear Mr. Gray,

Mr. Reed's clause is totally unworkable as it stands, owing to the want of details as to when and how the test on the iron is to be applied. If you refer to what the Chain Cables Act does contain, you will see what I mean. Such a condition being made between buyer and seller, they can then arrange particulars; but if the condition is to be Parliamentary, so must the conditions. I have do doubt Mr. Reed will see this as soon as it is pointed out, and will understand that he must add considerably to his clause before it can be proper to become law.

Yours, &c.
(signed) *E. Crawshay.*

— No. 112. —

(M. 6766.)

Mr. *T. R. Oswald*, Sunderland.

Sir,

Sunderland, 3 May 1875.

I am in receipt of yours of the 29th ultimo, asking for my opinion on the the effect which Mr. E. J. Reed's, C.B., M.P., proposed test of iron clause to be introduced into the Merchant Shipping Bill now before Parliament will have on the construction of iron ships, &c., and its results in the practical working of it.

Taking your questions in the same order as given in your letter, I am of opinion that such a clause would materially increase the cost of the iron without practically improving the material required in the construction of ships, &c.; that such a test would in no respect add to the security of life and property at sea, nor would it ensure that good iron alone (and by good iron I mean suitable material for the work it is intended for) would be used in the construction; that it would be impracticable to carry out in every day practice, and would be liable to introduce endless disputes on contracts in currency, and give an opening to unprincipled purchasers for getting out of their contracts, and disastrously affect the ship-building trade of this country; that it would greatly interfere, and stop the regular and systematic carrying on of work, and thereby entail undue pressure to complete, which is most undesirable to ensure good workmanship.

I consider this proposed Government test of iron wholly unnecessary and undesirable, for every iron ship now built has samples of the iron used in her construction tested by the surveyors under whose inspection ships are built, both by hot and cold tests; that, in practice, bad iron cannot be worked in the construction of a vessel, and that the quality must be good and suitable, to enable it to be worked; and that the work put on the iron used in the several parts is in itself, if properly watched, a most sufficient and efficient test of the good and suitable quality of the material.

For the foregoing reasons, I consider it is *not* desirable to insert Mr. E. J. Reed's, C.B., M.P., test of iron clause in the Merchant Shipping Bill now before Parliament.

I am, &c.

Thomas Gray, Esq.,
Board of Trade.

(signed) *T. R. Oswald.*

— No. 113. —

(M. 6818.)

Messrs. *Grendon & Co.*, Drogheda.

Sir, Drogheda, 3 May 1875.

In answer to your letter of the 29th April (M. 4764), we beg to say that, in our opinion, the insertion of the Clause 28*a*, test of iron, proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, would very much tend to check the manufacture of inferior iron plates, called ship plates, and would necessitate the use of a much superior quality for shipbuilding purposes; but this would, of course, increase the cost of this material, and thereby also increase the cost of iron-built ships to some extent, with reference to hull and masts only. The iron used in the machinery of iron steamships being almost invariably of a higher class quality than what is at present used for the hulls; but at same time we think that the present regulations of the Board of Trade with respect to construction of boilers might be improved by requiring the iron used in their construction to be subject also to at least a similar test.

The use of a better class of iron than what is used in general use in the construction of iron ships would, of course, add to the security of life and property; but to attain this object, in addition to the quality of the material, the quality of the workmanship is also of paramount importance, as the best materials may be rendered of little avail in that respect by inferior workmanship in the plating and riveting.

It has become almost a general rule with shipbuilders to let out the plating and riveting to workmen, at a rate per plate for the plating, and per hundred for the riveting, hence the tendency is to hurry over the work, setting the plates in the curved portions of the work badly, and drawing them up to position by bolts previous to their being riveted, such plates having a tendency afterwards, when any undue strain is imposed on them, to shut the countersunk off the rivets and open the seam; therefore, it may be worthy of consideration if this system of plating by piece-work should not in some way be restricted; but this would have a tendency also to increase the cost of production.

With the before-mentioned objects in view, to ensure the use of better quality of iron, and thereby give additional security to life and property, we would advise that all iron used in the construction of the hulls of iron ships should be subjected to a test of 20 tons per square inch of section of tensile strain for the strength of absolute mean breaking strain, and the strain per square inch of *broken* section to be 24 tons, and a bending strain of at least 45 degrees.

The iron selected for testing should be a fair average sample of the iron intended to be or being used, and all parties interested should be allowed liberty to have counter tests made by approved parties licensed by the Board of Trade, and suitable arrangements should be made to *ensure impartial tests*, free of all prejudice arising from the locality of makers of the iron or the shipbuilders.

We are, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *Thos. Grendon & Co.*

— No. 114. —

(M. 6819.)

Mr. *Thomas Bell*, Newcastle.

Sir, Newcastle-on-Tyne, 4 May 1875.

In reply to your favour of the 29th ultimo, enclosing copy of a clause proposed to be submitted to Parliament for introduction into the Merchant Shipping Bill, by Mr. E. J. Reed, I have to state—

1. That as you do not state the tests to which the iron has to be subjected, I am unable to say what additional cost would be entailed on the iron, but assuming them to be the ordinary Government tests, then I think 10 or 15 per cent. on the cost of best iron would cover it.

2. I am not aware of any serious losses of shipping arising from defective quality of iron, and therefore cannot speak as to how far the clause, as given, would add to the security of life and shipping, or whether a test is desirable.

3. The clause would undoubtedly ensure the use of a better class of iron in the construction of ships.

4. The clause, as it stands, I think would work very badly in practice. I should not object to a moderate test clause in contracts for iron, but that a shipbuilder should have the right, as suggested, to reject any iron, *any contract notwithstanding*, I consider would be a monstrous injustice to the contractors for the iron. Many shipbuilders build other things than sea-going vessels, such as bridges, barges, &c., and the iron maker or contractor has no means of knowing what the iron is required for; it does, therefore, appear unfair, if it should happen to be used in shipbuilding, that he should be subjected to penalties of deficient quality, *any contract notwithstanding*. The case, I think, would be met by stipulating that iron used by shipbuilders should stand certain tests, thus throwing the responsibility on builders to see that good quality of material is used.

I remain, &c.

The Assistant Secretary, (signed) *Thomas Bell.*
Marine Department, Board of Trade.

— No. 115. —

(M. 6821.)

Messrs. *Fox, Head, & Co.*, Middlesbrough.

Newport Rolling Mills, Middlesbrough.

Dear Sir, 4 May 1875.

In reply to your circular of the 29th April, we have to say we have carefully considered what is contained therein; but inasmuch as the tests to which the iron is to be subjected are omitted, we fear we cannot give any opinion worth having upon the matter; everything depends on the nature of these tests. The conditions to which makers of shipbuilding iron are now subjected are simply that the iron shall be pretty accurate to dimensions, shall stand whatever test is required in constructing the ship without cracking, and shall be equal to a tensile strain of 20 tons with and 18 tons across the fibre. It is very rare we have any plates rejected on account of quality; but, for our own credit sake, we never knowingly send out plates that will not easily conform to the requirements of Lloyd's surveyors. If in Mr. Reed's clause strains equal to those now expected by Lloyd's are alone inserted, we do not suppose that the clause will have any practical effect whatever. If, however, tests similar to those required by the British Admiralty are inserted, either the cost of shipbuilding iron will be at once doubled, or the shipbuilder and shipowner will have to come to an understanding with the iron maker not to put in force their powers. So long as iron is made by the hand-puddling process as at present, a higher quality and greater regularity than is found in the best shipbuilding brands can only be obtained at a greatly enhanced cost, which, of course, must be defrayed by the shipowner, and ultimately by the public.

Rotatory puddling furnaces will probably do away with the difficulty in the course of a few years, enabling iron equal to the best Yorkshire brands to be produced out of the commonest iron, at little above the present cost of shipbuilding iron; but this must not be expected yet. In our opinion, if you attempt by legislative action to obtain iron similar to that supplied by the British Admiralty generally for shipbuilding purposes, you will diminish the quantity in the market to a small proportion of what is now offered, and will enhance the price proportionately. This would act in restraint of iron shipbuilding everywhere. We do not think legislative action will do any good; the difficulty will only be met by superseding hand-puddling by machine puddling, and this change is already going on as fast as is desirable.

We are, &c.

Thomas Gray, Esq. (signed) *Fox, Head, & Co.*

— No. 116. —

(M. 6822.)

Mr. *James Humphrys*, Hull.

Kingston Iron Works, Hull,
4 May 1875.

Sir,

Referring to your circular letter, M. 4764, dated 29th ultimo, I am of opinion that the test of iron 28*a*, as proposed in the terms of Mr. Reed, would be impracticable.

Undoubtedly it is desirable that the iron used in the construction of ships should be of proper quality; but if contracts for shipbuilding be properly drawn there need be no difficulty in obtaining suitable iron.

I shall be obliged if you can inform me what reliable evidence exists as to the loss of any iron ships being directly caused by the inferior quality of the iron used in their construction.

I have, &c.

The Assistant Secretary, (signed) *James Humphrys.*
Marine Department, Board of Trade.

— No. 117. —

(M. 6850.)

Mr. *G. T. Clark*, Dowlais.

Dowlais House, Dowlais,
4 May 1875.

Sir,

I have the honour to acknowledge the receipt of your letter of the 29th ultimo (M. 4764), enclosing Clause 28*a* of Mr. Reed's Bill, and desiring an opinion upon it.

Mr. Reed's proposal is beset with difficulties which appear to me to be, in practice, insuperable. There could be no objection to the builder of a ship, or the purchaser, having the power to test for quality and strength the materials used in her construction at any place licensed by the Board of Trade for testing chain cables and anchors, provided, however, that the material be tested, as between the ironmaster and the shipbuilder, before the plates are worked into shape and punched, and, as between the shipbuilder and the purchaser of the ship, from time to time as the work proceeds. The work should be passed and accepted at certain intervals during the building of the ship.

If the builder has power to reject iron after it has been worked into the ship, involving, perhaps, the whole of the material used in her construction, no prudent ironmaster would accept the risk, except for the consideration of a very high price for his iron, whereas he would be quite willing to accept the risk of having his iron tested in the manner proposed, before it is used, without seeking any additional price for the material.

In the same way the builder, if the material used in, and the quality of work upon, the ship were to be passed and accepted periodically, would not be exposed to any extraordinary risk; whereas, if the purchaser had the power to inspect after

after the ship was finished, this power might be abused, and the risk to the builder would have to be paid for at a cost out of all proportion to the improved quality which Mr. Reed's proposition seeks to insure.

I am, &c.
(signed) *Geo. T. Clark*,
Trustee of the Dowlais Iron Works.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 118. —

(M. 6916.)

Mr. *J. G. Lawrie*, Glasgow.

Sir, Glasgow, 5 May 1875.

I HAVE had the honour to receive your letter (M. 4764), dated 29th April 1875.

The clause proposed by Mr. E. J. Reed, relating to the test of iron, is impracticable, and, if otherwise, it would be worthless.

The proposed clause leaves the testing of iron optional with the shipowner, and as it is the second-rate class of shipowners who require to be looked after respecting the quality and use they make of their ships, these gentlemen would not voluntarily put upon themselves the expense of having the iron used in their ships of the superior quality necessary to bear the proper tests.

Even if some of them were willing to incur this extra expense, the tests could not in busy times for shipbuilders be carried out. The number of ironmakers is very limited, and if a builder rejected some iron because it would not bear the test, the ironmaker, though he would express perfect willingness to replace the iron, would only do it after great delay, and would in the meantime, during the pressure of work, send his iron to builders who at the time were not under the obligation to apply the tests. Practical men know that optional tests, from that cause alone, could not, even if desired, be carried into effect.

The result of the clause proposed by Mr. E. J. Reed, if made law, will be that the ships which should be built of iron that will bear the test will not be so built. The clause will be a dead letter.

I maintain, however, that all ships should be built of tested iron, and that the tests should be the same as are specified by the Admiralty. If all ships were required to be built of that quality of iron, all contention betwixt the shipowner and the builder and betwixt the builder and the ironmaker would be removed.

The quality of ships in strength and durability would be immensely improved, and I do not think the cost would be much, if at all, increased. Under the necessity to purchase superior iron to bear the test, improvements in its manufacture would be devised without permanently increasing the cost.

At present, if a ship goes ashore, and a puff of wind gets up, the ship is blown to pieces and becomes a total loss. With superior iron in the structure of the ship such speedy and complete destruction of the ship would not occur.

As an example, the "Great Britain" in Dundrum Bay withstood a winter's beating, and is now as efficient a ship as is afloat.

I maintain that ships will not have justice until the load line is limited in accordance with the description of the ship and the nature of the voyage, and until they are built of tested iron.

I have, &c.
(signed) *J. G. Lawrie.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 119. —

(M. 6917.)

Messrs. *Barclay, Curle, & Co.*, Glasgow.

Stobcross Slip Docks, Glasgow,
5 May 1875.

Dear Sir,

In reply to your letter of 29th ultimo, we are of opinion generally that the clause proposed by Mr. E. J. Reed to be introduced into the Merchant Shipping Bill is quite uncalled for. At present shipowners, when making contracts, are at perfect liberty to specify any kind of iron they may wish, and for any tests or supervision they may think necessary without Government inspection, and have recovered against the builders where the conditions may not have been complied with.

We are, &c.
(signed) *Barclay, Curle & Co.*

Thomas Gray, Esq.
Assistant Secretary, Board of Trade.

— No. 120. —

(M. 6918.)

Messrs. *H. Murray & Co.*, Port Glasgow.

Kingston Building Yard, Port Glasgow,
5 May 1875.

Sir,

In reply to your circular, M. 4764, of 29th ultimo, received yesterday, we think Mr. Reed's proposed clause very undesirable and wholly uncalled for. Shipowners who would be likely to put it in force can at present accomplish the same end by stipulating in the contract that the iron shall stand a specified test. This is occasionally though rarely done, but we do not think it of much use, as the iron is tested sufficiently in the process of punching and working to the shape of the vessel, and, in fact, often shows faults then which would not be found out by merely testing a portion. Where vessels are classed, underwriters' surveyors look closely into this, and condemn all iron found faulty. Where it is not intended to insure, owners' inspectors do the same thing, unless it is left to the shipbuilder, who, if conscientious, would not think of passing iron that had given way in the working. The proposed clause would probably induce shipbuilders to have all iron used in construction tested, marked, and certified, as anchors and chains are at present. This would add so much to the cost that the shipbuilding trade would run the risk of being driven out of the country, even if shipbuilders were willing to carry on their business under an enactment so intolerable and so uncertain in its incidence, even after every precaution had been taken and extra expense incurred, it being quite possible for iron to fail at a second test after having stood a first one of the same conditions. It would in effect give shipowners an option of throwing up any contract that had become disadvantageous to them, or which they found themselves unable to carry out, as the contract of the best ship that was ever built could be annulled under such a clause by merely testing in a sufficient number of places.

We are, &c.
(signed) *H. Murray & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 121. —

(M. 6919.)

Mr. *John Ker*, Kirkcaldy.

White Bank Engine Works, Kirkcaldy,
5 May 1875.

Sir,

I duly received your letter of the 29th, enclosing copy of clause proposed (by Mr. E. J. Reed, C.B., M.P.) for introduction into the Merchant Shipping Bill now before Parliament, and to which I have to reply as follows:—

1st. I have

1st. I have no objection to a *moderate test* on iron, provided that test is done at the place, or in the locality where the iron is made, and there stamped and passed by the Board of Trade officer as a final settlement of quality.

2nd. You do not give the number of tons in test clause which the iron is to be tested to per square inch; till that is fixed one cannot say for certain what will be the increased cost of iron, but with a very *moderate test* you will increase the cost of iron hulls of both ships and steamers from 15 to 20 per cent., and if the test is to be increased to the Admiralty standard, you will add 130 per cent. to the cost of iron, which would bring up the cost of vessels to something like 60 per cent. higher than at present; this I do not consider desirable, and I am of opinion it would not add to the safety of life and property at sea.

3rd. The stipulations in the Test Clause, *as you have it*, would have an injurious effect in every-day practice, and without doubt will lead to considerable disagreements and probably litigation between *some* owners and builders.

4th. As the clause stands it would involve very responsible and extended duties on the surveyors of the Board of Trade, some of whom are experienced and able officers, who discharge their duties with advantage to the shipping interests, while some others are not so experienced. If this test stipulation is to become law *as it stands*, the survey of ships will become a source of great annoyance and inconvenience, without a corresponding beneficial effect to the shipping interests generally.

5th. It will for a certainty have the effect of keeping away foreign orders to a considerable extent, where cheapness is the only inducement to the foreigners at present.

6th. As you ask my opinion generally, I have to say I am of opinion the Government and those pressing this change into the mercantile marine law are going somewhat in the wrong direction. From my observations the losses of vessels at sea, particularly steamers, are caused by insufficient construction, and want of protection to all deck openings, such as engine and boiler hatches, boiler casings, and coal scuttles, and of imperfect construction of *inlet sea cocks* and discharge valves. By your issuing a simple code of rules for the proper construction and protection of these parts, you would add much to the security of life and property at sea without causing any unnecessary expense in the first cost of vessels, as practised by good builders.

I am, &c.
(signed) *John Ker.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 122. —

(M. 6920.)

Messrs. *W. Doxford & Sons*, Sunderland.

Pallion Yard, Sunderland.
5 May 1875.

Sir,

In reply to your communication dated the 29th ultimo (M. 4764), respecting the clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, we beg to say that, in our opinion, such a clause would either be inoperative or very mischievous, according to the inclination of the shipowner, for the following reasons:—In the first place the testing of iron is not made compulsory; it is left to the shipowner to agree to have his ship built of tested or untested iron, and yet gives him power to turn round at the last moment and refuse to take the ship because not built of tested iron, though built in accordance with his agreement. Nothing in our opinion could be less to the interest of all parties than such a law.

In the second place the cost of iron would be increased 4 *l.* to 5 *l.* per ton, if tested upon the Admiralty system, without any corresponding improvement in the quality, the extra price not being charged so much for improved quality as to cover cost of testing and the risk of having some tons condemned because a few pieces in the lot are defective. But, if anything, the proposed clause is even

worse than this, for by it an owner may demand that every piece of iron used be tested, which would entail such an enormous cost that iron ships would cease to be built, for owners would never pay the necessary price to cover it, and yet no builder would agree to use untested iron, on account of the owner having power to have it tested "any contract notwithstanding."

Replying more directly to the points named in your letter, we beg to say—

1st. That the proposed clause, if at all practical (which we consider it is not), might slightly improve the quality of iron, although not at all in proportion to the extra cost, but this would much depend upon the test required.

2nd. We do not consider that it would add to the security of life and property at sea any more than a little more care in condemning perceptibly defective iron would.

3rd. It would not "ensure that good iron alone is used in ships," for every piece could not be so tested.

4th. It could not possibly work well in every-day practice, for if it were at all possible to act upon it, the delay and uncertainty caused by putting the clause in force, would put a stop to iron shipbuilding altogether.

We may further add that from our experience both of ordinary shipbuilding iron, and of that used for Government vessels, and tested according to their requirements, we have come to the conclusion that all that is necessary to ensure good iron being used, is to thoroughly examine it as it is being wrought into the ship, and to condemn all iron which shows any flaw in punching or bending, for the principal fault in iron is that it is too hard, and the ordinary working that plates and angles get is quite sufficient to show this.

If it is considered necessary to have the iron tested in any other way than this, the only practical way of having it done will be by having a testing machine at every rolling mill, and a man there, appointed by the Board of Trade, to see that no iron is allowed to leave the works but what has passed the test. This is, in our opinion, the only practical way of having such a test carried out, but, to adopt it, would probably so much interfere with the whole iron trade of the country as to ruin it altogether.

We are, &c.
(signed) *William Doxford & Sons.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 123. —

(M. 6926.)

Messrs. *Bewley, Webb, & Co.*, Dublin.

Port of Dublin Ship Yard, Dublin,
5 May 1875.

Sir,

In reply to your circular bearing date of the 29th ultimo, with reference to Clause 28A (test of iron) of the Merchant Shipping Bill now before Parliament, we beg to state that while we consider it is very advisable to have places licensed by the Board of Trade for the testing of iron used in the construction of ships, we are of opinion that such a clause as that proposed would add little or nothing "to the security of life and property at sea."

We are led to this conclusion as a case has seldom, if, indeed, ever, come under our notice where the origin of the accident would not have produced the same disastrous results, irrespective of the quality of the material used in the construction (this does not refer to cases where bad workmanship or deficiency in the section of the iron has contributed to the accident); and we are of opinion that the quality of the iron now used in the construction of the hull of ships is sufficiently good for the requirements when the vessel is afloat, and further that the process to which the iron is subjected is a sufficient test of its quality; a better description being always used where it has to be more severely punished in preparation.

We

We may also add that the careful supervision exercised by the surveyors of Lloyd's and the Liverpool Associations (under which most vessels are now built) in preventing any faulty material being used, and especially where the iron is subjected to more severe treatment, is a sufficient warrant that suitable iron is used in the construction.

We also consider that if a moderate straining test were made compulsory, the law would not be evaded.

We are, &c.

The Assistant Secretary, (signed) *Bewley, Webb, & Co.*
Marine Department, Board of Trade.

N.B.—The above remarks do not apply to boilers. We consider that most losses are caused by gross carelessness or by overloading.

— No. 124. —

(M. 6927.)

Messrs. *Aitken & Mansel*, Glasgow.

Shipbuilding Yard, Whiteinch,
Sir, Glasgow, 5 May 1875.

In reply to your favour of the 29th ultimo (M. 4764), we beg to say that any competent practical man has no difficulty in judging of the quality of iron, by simple inspection of the clippings and punchings, during the progress of building, whether it is suited for its intended purpose; and this seems to us to be the business of the registry surveyors, or of privately employed inspectors.

The introduction of formal tests, enforced by Board of Trade officials, would simply have the ultimate effect, in our opinion, of transferring the shipbuilding and carrying trades of this country into the hands of other nations.

We remain, &c.

The Assistant Secretary, (signed) *Aitken & Mansel.*
Marine Department, Board of Trade.

— No. 125. —

(M. 6928.)

Messrs. *Harland & Wolff*, Belfast.

Iron Shipbuilding and Engineering Works,
Dear Sir, Belfast, 5 May 1875.

We are in receipt of your inquiry of the 29th ultimo, as to our opinion with respect to the clause proposed by Mr. Reed, to be inserted in the Merchant Shipping Act.

In all our experience as iron shipbuilders, we have invariably found that however bad the material was, the workmanship in the same vessel was infinitely worse, so that to legislate on the quality of the materials to be used, seems to us to be beginning at the wrong end. Those builders who give good workmanship are also careful to expend it on good material, while, on the other hand, inferior or cheap builders go for saving far more in the item of labour than they could on the first cost of the iron.

Not even in repairing the most inferior ships have we ever found an instance of their weakness arising solely from defective material, the causes of such weakness being invariably from insufficient rivetting, either as regards the number or size of the rivets, or the mode of driving them, together with a want of judgment in distributing the materials in anticipation of the strain they have to meet.

We fear that defective rivetting may in most cases be traced to the too common practice of letting such work to the men by contract or on "piece-work," or still worse, where the foreman is allowed to become the contractor.

Such a clause, therefore, as Mr. Reed proposes, would to our mind prove ineffectual in insuring seaworthiness, while it would be certain to cause much inconvenience and no end of litigation; and if a standard of quality were fixed,

no doubt evasions would be common, as an unnecessary element of cost being introduced, both builders and owners would arrange to dispense with it.

We do not see either that any law could provide a standard of workmanship, and perhaps it is unnecessary that it should, seeing that ships are being built more and more under the supervision of the surveyors to Lloyd's and the Liverpool Registries, whose province it is specially to watch the workmanship.

We are, &c.

Thomas Gray, Esq.,
Board of Trade.

(signed) *Harland & Wolff.*

— No. 126. —

(M. 6996.)

Messrs. *A. Hall & Co.*, Aberdeen.

Sir, Aberdeen, 5 May 1875.

We have to acknowledge receipt of your circular of 29th ultimo, in reference to a clause as to testing of shipbuilding iron, proposed to be introduced into the Merchant Shipping Bill, now before Parliament.

We are of opinion if this test is to be introduced at all, it must be compulsory for all vessels, and not left to the option of any owner or builder, otherwise it would be impracticable to work it, and would certainly be evaded.

The strains required are not specified in the clause, but this test would add very seriously to the cost of iron, were it only for the expense of Government inspection, for unless *every* plate made for shipbuilding bears a stamp put on it by Government, the whole thing would be null and void.

How far this would affect the mercantile marine of this country in competing with ships of other nations is a very serious question, for it is easily to be seen that they are already too much hampered, and that foreigners are doing a very large proportion of the carrying.

That this clause should come in force on the 1st of January 1876, is on the face of it impracticable; many of the contracts now made will not be finished by that date, and by this clause, should an owner find one inferior piece of plate in his ship on 1st January 1876, he is at liberty to throw her on the builder's hands; it should not be earlier than 1st January 1877.

From our own experience we see no great necessity for this clause, we have always found the working of the material a sufficient test of its quality, and if all builders would make a point of throwing on the maker's hands any iron which they find defective in working, the number of inferior plates sent to them would rapidly decrease

We do not believe that one ship in a hundred is lost through the bad quality of iron; we all know that when a ship gets on the rocks no quality of iron will save her, and it is only when she founders at sea that her loss could be attributed to bad iron. Unfortunately there have been too many cases of foundering of late with steamers; but this is not the fault of the iron, there are several very good reasons; first, by far the greater proportion of these steamers lost last winter were what is known as "cargo boats," and to look at them one would not suppose they were intended to float on the water, in addition to being overloaded; they have neither shape nor form, and are of such extreme proportions, that it is next to impossible to strengthen them sufficiently.

Another very serious defect is the want of engine power; they are well enough in fine weather, but when they meet with a gale they are helpless; the Merchant Shipping Bill would save far more lives at sea by introducing a clause that the engine power in steamers should be in proportion to their displacement, than by introducing a clause for testing the iron.

We seldom hear of an iron sailing ship foundering at sea, or even showing weakness, and they are built of the same iron as the steamers; the fact is, the proportions of their dimensions are within bounds, and they have no openings below water for connections to the machinery, which is another fertile source of disaster amongst steamers.

We are, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *A. Hall & Co.*

— No. 127. —

(M. 6998.)

Mr. *Martin Samuelson*, Hull.

Sir, Hull, 6 May 1875.

In reply to your letter of the 29th ultimo, to hand yesterday, I beg to state that I am of opinion that Mr. Reed's resolution, 28 A, as to test of iron will be very beneficial. I am of opinion that a great deal of very inferior iron is supplied for shipbuilding and quite unsuitable for the purpose, and this refers even more especially to angle iron, than to plates. The cause of inferiority is in consequence of the very great competition at present existing in the manufacture of iron, and the desire on the part of some shipowners to get cheap ships, and the masters of inferior iron to compete with first-class makers.

Twenty years since the plates and angles used for shipbuilding were in quality very little, if at all, inferior to boiler-plate iron, and it is a fact patent to all that ships built 20 years since, and now in existence, are of a much superior quality to those built in later years. The test to be applied should, in my opinion, be not less than say of 20 tons to the square inch, and as to the bending quality, as plates for shipbuilding when bent are usually done so hot, the test should be for bending when the plates are heated, and should show no fracture when bent to, say 45 degrees.

I am of opinion that the use of iron of good quality would materially add to the security of life and property at sea, without materially increasing the cost of ships and machinery. There are now many manufacturers who supply a first-class article at a reasonable price, and the test would induce the masters of the lower class of material to supply a better quality of iron.

With regard to the last clause in Mr. Reed's proposed test, I think it unnecessary to consider the per-centage of the extension of the iron, when the iron is bent, for if it stands the strain per ton cold, and the bending to the degree required when hot without fracture, the question of tensile extension, when hot, is one which requires no consideration.

If the tests are applied as suggested by Mr. Reed, I believe that no evasion of the law would take place, as the risk would be too great both to the shipbuilder and to the manufacturer of the iron, and as an experienced shipbuilder of 25 years' standing, I can see no reason why such a test should not work well in every-day practice. Those who are in the habit of building good ships and making good iron will never attempt to evade the test, and those who act contrarily will be deservedly punished by a rejection of the ship or iron, as the case may be.

I have long been of opinion that a test should be applied, hence my decided reply to your inquiries.

I am, &c.

The Assistant Secretary, (signed) *Martin Samuelson.*
Marine Department, Board of Trade.

P.S.—In many instances it will be found an advantage to shipbuilders to use a better class of material, as the waste and cost in the conversion of iron of inferior quality is frequently very heavy.

— No. 128. —

(M. 6999.)

The Shotts Iron Company, Leith.

Shotts Iron Company, Secretary's Office,
33, Constitution-street, Leith,
6 May 1875.

Sir,

In answer to your printed circular of date 29th ultimo, addressed to this company's Glasgow office, we beg to state that the proposed clause will in our opinion have a very beneficial effect, for at present iron of an inferior quality is often made use of for shipbuilding purposes.

I am, &c.

The Assistant Secretary, (signed) *Wm. B. Lindsay,*
Marine Department, Board of Trade. Secretary.

— No. 129. —

(M. 7002.)

Messrs. *John Elder & Co.*, Glasgow.

12, Centre-street, Glasgow,
Sir, 6 May 1875.

THE letter of Mr. Thomas Gray from the Board of Trade, dated Whitehall Gardens, 29th April, was only received here yesterday.

In reply thereto, we have to state that the clause proposed by Mr. E. J. Reed, C.B., M.P., to be inserted in the Merchant Shipping Bill, in our opinion, if it became law,

1. Would operate injuriously on the marine, engineering, and iron shipbuilding industries of this country, by adding largely to the cost of production.

2. It would not add to the security of life and property at sea.

3. It would not be likely to attain the desired end of ensuring that good iron alone is used in ships; and

4. It would work badly in every-day practice.

In explanation of these views, we may say, with respect to our first opinion, that the cost of iron would be increased considerably, without benefiting anyone, because of the manufacture of the iron requiring a considerably increased price for testing. Even at the present time many makers decline to quote prices for iron, to stand Government tests, on account of the great annoyance it gives them, although it is well known that the article they make will stand the required tests; and in these cases, where the makers guarantee the same article, they always ask and obtain a greatly increased price. There would be a further increase in the cost to cover the serious liability of the constructor of ships and machinery to have it thrown on his hands, because of some alleged defects, and because of keeping him from attending to his business while engaged in disputes, which could not fail to be numerous.

Again, the delay which would necessarily occur in testing, &c., would produce a want of use of the shipbuilder's or engineer's premises, if the iron was being tested as the work proceeded, which would add at least one-third, probably a good deal more (especially in busy seasons), to the time of construction, and would correspondingly diminish the annual output, without diminishing the annual cost, and consequently add largely to the cost of production, and such testing would not, in our opinion, tend to bring into use an improved quality of iron, as the tests would be always liable to evasion, and might even admit of indifferent material being used, which a surveyor would otherwise have felt empowered to reject.

With respect to the second and third opinions, we do not believe that the proposed testing would add to the security of life and property at sea, as we have no direct evidence of ships having been lost because of their hulls, or machinery, being constructed of inferior iron; although we are aware that such is sometimes used. But if these are surveyed during building, inferior iron can always be more effectually discovered than by an occasional test, such as is proposed being made upon a selected piece.

With respect to the fourth opinion, we think the clause would work badly in every-day practice, because, if some owners had the power of testing, subject to such an amount of responsibility as is proposed by the clause, and keeping in mind that some contracts have heavy time penalties, it would lead to endless litigation, and a possible abandonment of the trade, or, at all events, a great restriction of it, by responsible shipbuilders and engineers.

Generally speaking, our opinion is against all permissive legislation, and we believe that if such a clause became law it would revolutionise the trade, and would hamper the manufacturers of iron ships and machinery to such an extent as to add so largely to the cost, without any benefit to the structures, as to give other nations such an advantage over us as could not fail to force large quantities of these important industries away from this country; and that, for the reasons before given, the clause is neither necessary nor desirable.

If

If iron must be tested by strain and bending, as proposed in the clause, it should be done at the rolling mills or the forges, where made, to avoid the expense of carriage of rejected material, and reduce the delay and responsibility of the shipbuilders and engineers, who are not its manufacturers, to a minimum. The different brands should have a standard test, and, when passed by the inspector, should be marked, and never afterwards be liable to be called in question.

We are, &c.

The Assistant Secretary, (signed) *John Elder & Co.*
Marine Department, Board of Trade.

— No. 130. —

(M. 7005.)

Messrs. *J. Blumer & Co.*, Sunderland.

North Dock Shipbuilding Yard, Sunderland,
Sir, 6 May 1875.

We have the honour to acknowledge the receipt of your communication of 29th ultimo.

2. In our opinion the insertion in the Merchant Shipping Bill of the clause proposed by Mr. Reed is most undesirable, inasmuch as it would give powers to shipowners to set aside contracts on what might prove to be very trifling grounds, and would give rise to endless litigation in falling markets, without materially adding to the seaworthiness of ships in general.

3. It cannot be denied that the general run of shipbuilding iron is not so good as it was in former years, and that much more is now returned to the makers, on the condemnation of the builders themselves, and of Lloyd's surveyors, than was formerly the case. We are, however, of opinion, that any iron which stands the necessary manipulation, previous to being incorporated in the ship, and which stands the usual subsequent hammering and riveting, is good enough for all ordinary mercantile purposes.

4. The cost of iron would be materially increased by the proposed process of testing by the Board of Trade, and the evasions which would be practised by unscrupulous builders would enable them more than ever to compete successfully, in point of price, with more respectable firms.

5. We see no advantage to be gained in further hampering with legislation a trade which is, even in the best of times, less remunerative than most others. If shipowners want good ships, they have simply to apply to builders of recognised standing, to order vessels of a high class in Lloyd's or other classification, to appoint special overseers on their own behalf (to whom no respectable builder ever objects), and to pay such prices as will enable builders to build good ships without defrauding their creditors.

We have, &c.

The Assistant Secretary, (signed) *John Blumer & Co.*
Marine Department, Board of Trade.

— No. 131. —

(M. 7006.)

Messrs. *G. Forrester & Co.*, Liverpool.

Vauxhall Foundry, Liverpool,
Sir, 6 May 1875.

We have the honour to acknowledge your favour, M. 4764, of the 29th ultimo, and in reply to state, that we think the clause proposed by Mr. E. J. Reed for introduction into the Merchant Shipping Bill, now before Parliament, would improve the manufacture, but increase the cost of iron, and, therefore, the

cost of ships and machinery. We think there would be difficulties in the working and every-day practice, and would require more facilities for testing than now exist.

The fear of evasion must depend upon the respectability of the manufacturer, and the attention of the surveyor.

We are, &c.

The Assistant Secretary, (signed) *Geo. Forrester & Co.*
Marine Department, Board of Trade.

— No. 132. —

(M. 7010.)

Mr. *Alex. Taylor*, Newcastle.

22, Waverley-terrace, Newcastle-on-Tyne,
Sir, 6 May 1875.

I RECEIVED your favour, M. 4764, enclosing a copy of a clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill, now before Parliament, and in answer I beg to state my opinion as follows:—

The manufacture of iron would be more carefully conducted if the manufacturer knew that his iron might be tested and returned, if unable to stand the test.

The cost of iron liable to be tested will be the cost of such iron as will at present endure the tensile strain and extension which may be demanded by the proposed Act.

The cost of machinery and outfit will remain unaffected if the present rules relating thereto are not altered, therefore the cost of ships will be in proportion to the cost of iron, and the quantity used in the *hull* alone.

It is reasonable to suppose that, if ships are built of a superior quality of iron, the safety of life and property will be increased, although I consider that more serious consequences lurk in the present defective workmanship than in the low quality of iron. I am also of opinion that it is necessary, and very desirable, that the iron used in shipbuilding should be tested, and if it is tested, ships built in the future will be of much better quality.

I see no sufficient reason why it should not work well in every-day practice, if the buyer of the iron or ship is allowed to call upon the Board of Trade to take and test any piece of iron intended for, or already forming part of, the ship, and if the sample successfully bears the test, let the party who ordered the test pay all the expenses the opposite party may have incurred in replacing the iron, and for the detention through the test.

I am, &c.

The Assistant Secretary, (signed) *A. Taylor.*
Marine Department, Board of Trade.

— No. 133. —

(M. 7044.)

Mr. *James Laing*, Sunderland.

Sir, Sunderland, 7 May 1875.

I HAVE the honour to acknowledge the receipt of your letter of the 29th April, enclosing a copy of a clause proposed by Mr. Reed to be introduced into the Merchant Shipping Bill now before Parliament, and asking me to express my opinion as to the effect which such a clause, if it became law, would have on the daily operation of shipbuilding, and whether it would tend to the increased security of life and property at sea. I have therefore to say that the direct and immediate effect of such a law would be to increase very considerably the cost of iron, such increase being in relation to the character of the test to be applied, and in order to make the test of any value, most, if not all, the iron used in the construction of ships would require to be subjected to it, the cost of which, in addition

addition to the time lost, and other expenses, would so materially add to the cost as to press very heavily on the shipbuilders of this country. This consideration would at once be removed were we to obtain a corresponding increase in the security of life and property at sea, but I do not think you would add to such security. The amount of surplus strength in all iron ships is such that I do not think that the cause of the foundering of any classed ships is attributable to the character of the iron, but rather to the quantity of material, quality of workmanship, the form and construction of the ship, and the nature and extent of her loading.

The registration societies take cognisance of the quality of the iron used, and their surveyors are required to satisfy themselves of its fitness for the purposes intended, and I believe there exists in the rules of these societies, when duly carried out, ample protection to the public as to the quality of the iron employed in shipbuilding; a law such as proposed would not work well in every-day practice, would open the door to very great evasion, press heavily and unfairly on those who honestly carried it out, add much to the cost of production, and cause great interruption to the progress of work, and, generally, such a test as proposed is neither necessary nor desirable.

I am, &c.

Thomas Gray, Esq. (signed) *James Laing.*

— No. 134. —

(M. 7043.)

Mr. *James Laing*, Sunderland.

Deptford Yard, Sunderland,
7 May 1875.

Sir,

With reference to my letter to you of this day, I beg to say that at a meeting of shipbuilders held to-day, the following resolution was passed:—

"On considering the subject of Mr. E. J. Reed's proposed clause to the Merchant Shipping Bill, the unanimous opinion was that the introduction of the clause requiring the testing of iron would be attended with very serious cost and stoppage of work in shipbuilding, and would be liable to much evasion."

I am, &c.

Thomas Gray, Esq., (signed) *James Laing.*
Assistant Secretary, Board of Trade.

— No. 135. —

(M. 7045.)

Messrs. *James Howden & Co.*, Glasgow.

8, Scotland-street, Glasgow,
7 May 1875.

Dear Sir,

Your circular letter of 29th ultimo, with copy of clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, we received on 3rd instant, and now have pleasure in forwarding our opinion thereon, as requested.

The effect which such a clause would have on the cost of iron, and of ships and machinery, would in our opinion be such as to all but annihilate the shipbuilding trade of this country, and, as a consequence, the marine engine trade likewise.

The effect of this proposed legislation on the manufacture of iron itself would not, we believe, tend to improve it. It is evident that while respectable firms would only quote at such prices as would ensure them against the risks they would run, needy and less scrupulous iron-makers, to save themselves from ruin by the stoppage of trade, would quote lower, and manufacture as before, taking the chance of escaping.

The same results would follow in the shipbuilding trade; the unscrupulous and needy would undertake the risks that respectable firms would decline.

We believe that such a clause, if it became the law, would neither improve

the quality of iron nor the construction of ships, but would produce distrust, litigation, and wide-spread ruin. It is in our opinion admirably designed to promote rascality and confusion, instead of the improvement of iron or of shipbuilding and safety at sea.

We have no hesitation in saying that out of every hundred Lowmoor boiler plates we receive, we could pick out one or more places where, if a piece were to be cut out and tested, it would not stand even a very low standard of tensile or bending strain. It would, therefore, not be difficult to find in some part of the finest and strongest iron ships afloat, including those built in the Admiralty Dockyards, where several pieces of iron could be cut out which would not stand the legal tests proposed. This proposed clause would therefore be all that would be necessary to enable any dishonest person, either to obtain a ship on his own terms, or to get rid of a vessel if it suited his purpose; it could not fail to ruin the unfortunate shipbuilder.

The test is, of itself, supposing no penalties, as proposed, were attached, neither necessary nor suitable for the purpose proposed. The testing of one or even of several parts of the iron in a vessel will not even give an approximation of the actual strength of the whole structure. Many parts of a vessel are made, not to stand either tensile or bending strain, but for stiffness, and are made of a thickness far above what is required for strain. If such iron is sound, whatever its quality for bending or extension, it is as good as the highest class iron for its purpose.

We find, in our experience, that the iron used in shipbuilding is generally good strong iron, and stands a fair average tensile strain. Bad or defective plates can very readily be discovered, either before or when being worked; and those requiring to be bent, such as keel-plates, &c., are very effectually tested by the process of bending and furnacing. Any inferior plates can at once be detected, and a competent inspector can prevent any defective plate from being used.

We are not aware of any cases where vessels of ordinary proportions and scantlings have been lost, or have shown signs of weakness from having been built of an inferior quality of iron. Inferior workmanship is a much more frequent cause of weakness, and, more than all, the abnormal proportions of vessels has been the fruitful cause of disasters at sea.

Our opinion, therefore, of this clause is most decidedly, that it is unnecessary and uncalled for, and, moreover, reprehensible in a high degree. Our opinion may be taken also as disinterested, inasmuch as we have no shipbuilding yard ourselves, but we contract largely with shipbuilders for steamships, and are therefore in the position of those into whose hands this legislation would play, if we were disposed to take advantage of it.

We remain, &c.
(signed) *James Howden & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 136. —

(M. 7046.)

Messrs. *C. D. Holmes & Co.*, Hull.

Sir, Hull, 7 May 1875.

In reply to your communication of the 29th April, we do not see how the clause respecting test of iron, as proposed by Mr. E. J. Reed, would add to the security of life and property at sea; and if iron used in the construction of engines, boilers, and ships is to be guaranteed to bear a given strain, it should in all cases be tested before it leaves the makers' works, and not put engineers and shipbuilders to the annoyance of testing it afterwards.

We are, &c.
(signed) *Charles D. Holmes & Co.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 137. —

(M. 7047.)

The Goole Engineering and Shipbuilding Company, Goole.

Sir, 7 May 1875.

I beg to acknowledge the receipt of your request, dated the 29th ult.

In reply, I beg to say that the test of iron for shipbuilding purposes, as proposed by Mr. E. J. Reed, M.P., for introduction into the Merchant Shipping Bill will, in my opinion, have a very good effect, as it will certainly put a check upon the production of such an inferior class of iron as is now manufactured, a great portion of which is totally unfit for the purpose for which it is made; this, doubtless, being caused by the desire of purchasers to have low-priced ships, and the readiness of builders (owing to close competition) to meet their views.

With regard to the extra cost of ships, &c., in consequence of the test of iron, I think that this will not bear comparison with the great additional safety to life and property that must be effected thereby; and I have no doubt that, as a rule, it would cause a desire amongst the manufacturers of the inferior class of iron to raise their quality to that of a many of the makers who now turn out iron of first-class quality.

Respecting the evasion of the iron tests, I am of opinion that the liability that will rest, both on manufacturer of material and on the shipbuilder, will be almost a guarantee of the law being respected; and I see no reason why it should not work well in every-day practice.

As to the test, I think the iron should be of such a quality as to stand a tensile strain of not less than about 20 tons to the square inch, and a bending strain, when heated, of about 45 degrees, without showing any fracture. I apprehend that if these tests are made satisfactorily, that it will be unnecessary to go into the question of per-centage on the extension.

I am, &c.

The Assistant Secretary, (signed) *James Darby*, Secretary.
Marine Department, Board of Trade.

— No. 138. —

(M. 7049.)

Messrs. *Alex. Stephen & Sons*, Glasgow.

Dear Sir, Linthouse, Govan, Glasgow, 7 May 1875.

We have to acknowledge receipt of your letter of 29th ultimo, in reference to a proposed clause by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament.

As the actual test for iron is not filled in, in the proposed clause, the effect of such a clause would be *nil;* but had the usual terms of what is named as the Government or Admiralty test been inserted, in our opinion the effect of such a clause would be to decrease the amount of iron manufactured, and would raise the cost of iron and of ships, but the machinery would not be affected by such a clause.

And we are further of opinion, that the effect of such a clause, if adopted, in adding to the security of life and property at sea, would not be known; and that it would not always attain the desired end of insuring that good iron alone is used in ships, but that in every-day practice it might be avoided even by parties who were under the belief that they were constructing their ships of the tests named.

In our experience, we do not consider such a test is necessary or desirable, as it would be unworkable in practice generally, and tend to diminish the trade of the country. If it is assumed that the iron generally used in the construction of ships on the Clyde, for commercial purposes, is inferior in quality, it is a very grave error in judgment, and that from our very large experience in the construction of about 200 vessels, of sizes varying from 100 to above 4,000 tons each, we have never received a complaint that the iron was inferior, nor have any of these vessels been lost, from the quality of the iron used in their construction.

We are, &c.

Thomas Gray, Esq., (signed) *Al. Stephen & Sons.*
Board of Trade.

— No. 139. —

(M. 7050.)

Mr. *R. Thompson*, Jun., Sunderland.

Southwick Yard, Sunderland,
Dear Sir, 7 May 1875.

In reply to your letter of 29th ultimo, I beg to say: 1st. I think such a clause would not improve the manufacture of iron generally, but would very materially increase the cost of iron, and of ships and machinery. 2nd. Nor do I think it would contribute to the security of life and property at sea. I do not see how such a clause would ensure a better quality of iron being used, as in all ships classed at Lloyd's or Liverpool underwriters, the iron of which they are built must be of good quality, and it is not to the shipbuilders' interest to use iron of inferior quality. It would not work well in every-day practice; in fact, it would be next to impossible to test all the iron required to build a ship, and consequently it would he evaded at every opportunity.

Yours, &c.
To the Assistant Secretary, (signed) *Robert Thompson*, Jun.
Marine Department, Board of Trade.

— No. 140. —

(M. 7051.)

Mr. *A. Tolmie*, Dennystown Forge Company, Glasgow.

Dennystown Forge Office, 166, Buchanan-street,
Sir, Glasgow, 7 May 1875.

Referring to printed circular received from you on 29th ultimo, regarding clause proposed (by Mr. E. J. Reed, C.B., M.P.) for introduction into the Merchant Shipping Bill now before Parliament:

The wording of the clause is so indefinite, and gives such unlimited powers to inspectors and other officials, that we should fear endless trouble and annoyance both to makers of iron and shipbuilders, as, in our opinion, mode of inspection now in force meets all the requirements necessary, and we therefore think the proposed clause quite uncalled for.

It is of vital interest to the shipbuilder to see that he is supplied with good iron from well-known and respectable manufacturers, and so save the necessity of plates or other materials being condemned.

We do not know if it has yet been proved that any ship has been lost owing to the inferior quality of iron used in its construction.

The scantlings, fastenings, construction and load line, are doubtless subjects for fair supervision.

I am, &c.
Thomas Gray, Esq., (signed) *A. Tolmie*,
Board of Trade. Senior Acting Partner.

— No. 141. —

(M. 7053.)

Mr. *T. Harrington*, London.

61, Gracechurch-street, London,
Sir, 7 May 1875.

In reply to your letter dated the 29th ultimo, delivered yesterday, with reference to the clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, I beg to say that, in my opinion, the effect would be likely to improve the quality of the iron, but it would proportionately increase the cost of ships, and also increase the difficulty of obtaining the material.

The

The adoption of this clause would not add to the security of life and property at sea, as I believe the iron now used in the construction of ships by respectable builders is sufficiently good for the purpose; all that is required is a proper distribution of material, good workmanship, and the avoidance of overloading, especially deck loads.

The clause would not work well; it would indeed be impracticable as every-day practice for mercantile shipbuilding, and I think that the discretional tests at present adopted by Lloyd's, a fair distribution of material, and proper surveillance of the work by competent surveyors while in course of construction, are the best and only practicable means of attaining the end desired.

I am, &c.
(signed) *T. Harrington.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 142. —

(M. 7054.)

Messrs. *R. Steele & Co.*, Greenock.

Sir, Greenock, 7 May 1875.

In reply to your favour of 29th April, and received 5th inst., we beg to say that we object most seriously to the clause for testing iron used in building ships, as proposed by Mr. Reed, as it would open the door to endless litigation. In our opinion, the requirements of Lloyd's rules, as contained in Section 3, are amply sufficient to ensure that the iron is of suitable quality for shipbuilding. We would prefer to see all vessels classed, in which case the quality of the iron can be seen and tested by the surveyors to the society. Section 3. The whole of the iron to be of a good malleable quality, to be subjected to tests at the discretion of the surveyors; brittle or inferior quality to be rejected.

We are, &c.
(signed) *Robert Steele & Co.*

Thomas Gray, Esq.

— No. 143. —

(M. 7058.)

The Great Western Railway Company, Swindon.

Great Western Railway
Locomotive and Carriage Department,
Engineer's Office, Swindon, 7 May 1875.

Sir,

In reply to your circular of the 29th ult., bearing reference M. 4764, I beg to say that in specifying for ships to be constructed for this company, it has been considered sufficient to stipulate for the iron used to be of the best English or Scotch make, each plate to have the maker's brand stamped upon it; the brand being considered a guarantee that inferior qualities of iron would not be used. It is probable that to specify a tensile and bending stress, equal to that required by the Admiralty in iron supplied for their purpose, would increase the iron from 1 *l.* to 2 *l.* per ton, according to the size of the plates. I am scarcely in a position to offer any opinion as to the effect of such a provision on the security of life and property at sea, as our experience of the working of ships is necessarily very limited.

I am, &c.
(signed) *Jos. Armstrong.*
per *W. D.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 144. —

(M. 7060.)

Messrs. *Hall, Russell, & Co.*, Aberdeen.

Aberdeen Iron Works, Footdee, Aberdeen,
7 May 1875.

Sir,

In reply to your communication, dated 12th April, and received six days' ago, we beg to say that, if iron is to be generally tested, it should be done by a Government official stationed at the works where iron is made; and if it is done at all, it should be compulsory on all; the tests that are presently applied to the iron supplied to the Royal Dockyards would, in our opinion, be quite ample; this will increase the cost of iron, and consequently of ships and machinery, very considerably; and to what extent it will add to the security of life and property at sea, we cannot tell, as we are not aware of the existence of any trustworthy data, showing what amount of life and property has been lost directly owing to an iron of an inferior quality being used; while there is no doubt that any such clause as the proposed one, or the compulsory testing of iron, will, for a considerable time, have a gagging effect on engineering and shipbuilding, and should not come into effect before 1877 at soonest, in order to allow plenty of time for suitable arrangements being made.

We are, &c.
(signed) *Hall, Russell, & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 145. —

(M. 7061.)

Messrs. *Maudslay, Sons, & Field*, Lambeth.

Lambeth, 6 May 1875.

Sir,

With reference to your communication of yesterday relative to the clause proposed by Mr. E. J. Reed, to be inserted into the Merchant Shipping Bill now before Parliament, we beg to say that we consider the clause a beneficial one, provided that the amount of strain to which the iron shall be subjected is settled by a committee of competent shipbuilders.

We are, &c.
(signed) *Maudslay, Sons, & Field.*

The Assistant Secretary,
Board of Trade.

— No. 146. —

(M. 7144.)

Messrs. *M. Pearse & Co.*, Stockton.

Stockton-on-Tees, 8 May 1875.

Sir,

We beg to acknowledge receipt of your circular letter of the 29th ult., handing us copy of a clause, proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, and inquiring our opinion as to the effect such a clause would be likely to have on the manufacture and cost, &c., of iron, and of ships and machinery.

In reply, we beg to state, we believe if such a clause were to become law, it would have a very injurious effect on the trade of iron shipbuilders, iron manufacturers, and marine engine builders of this country, without securing the result which the clause is framed to attain; the effect would be that iron would be made of such a quality that would just stand the test, and very probably means would be found by dishonest people to evade the law; it is also a well-known fact that a strip of plate will frequently stand a very severe test, while the plate may prove in working to be of very inferior quality; it would also cause great loss of time to manufacturers and others using the iron, and increase the cost of production very materially.

We

We believe that the strain the iron has to bear in working and fitting it to vessels is the safest and best test that can be applied, when done under the careful inspection by Lloyd's or Liverpool underwriters' surveyors.

We are, &c.
(signed) *M. Pearse & Co.*

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 147. —

(M. 7150.)

The Stockton Malleable Iron Company, Stockton.

Stockton Malleable Iron Company, Limited,
Stockton-on-Tees, 8 May 1875.

Sir,

Having fully considered the clause proposed to be introduced into the Merchant Shipping Bill now before Parliament, and your letter of the 29th ultimo in connection therewith, we beg to say it is our opinion that such clause is unnecessary, and would only have the effect of materially increasing the cost of iron manufactured for shipbuilding purposes. The requirements as regards tensile and bending strain are not stated in the copy of the clause sent us, and consequently we do not know to what extent it is proposed to apply the tests, but, in our opinion, the tests and inspection to which shipbuilding iron is subjected under the present Lloyd's regulations are ample and sufficient for the purpose.

Yours, &c.
(signed) *Chas. J. Watson*, Secretary.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 148. —

(M. 7151.)

The Thames Iron Works and Shipbuilding Company, Blackwall.

The Thames Iron Works and Shipbuilding
Company, Limited, Orchard-yard,
Blackwall, E., 7 May 1875.

Sir,

We are in receipt of your letter of the 29th ult. (M. 4764), asking our opinion upon the clause proposed for introduction into the Merchant Shipping Bill by Mr. Reed, but we consider it very difficult to reply to your various questions until the strains and tests it is intended to insist upon have been inserted in the clause.

We are, however, of opinion that, should the stipulated tests be neither unduly severe nor unfairly applied, the introduction of the clause would in the main be likely to produce beneficial results, but we are unprepared, without the full information before us, to express an opinion as to what extent it would tend to improve the quality of iron, increase its cost, or add to the security of life and property at sea.

I am, &c.
(signed) *J. J. Divers*, Manager.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 149. —

(M. 7152.)

Mr. *J. W. Wass*, Newcastle.

27, Quayside, Newcastle-on-Tyne,
8 May 1875.

Sir,

In reply to your circular of 29th ult. (M. 4764), in my opinion, the Clause 28*a*, as to test of iron, would greatly increase the cost of iron and of

ships; it does not appear to me it would affect the cost of machinery; it would tend to hamper shipbuilding, and probably to drive a large portion of it out of the country: I do not think appreciably add to the security of life and property at sea, as these are chiefly imperilled by imperfect methods of construction, overloading, and negligence of officers or men. I do not think it would be likely to attain the desired end, that good iron is used alone in ships, and, from the probability of much evasion, it does not appear to me that it would work well in every-day practice, but if Board of Trade was to give certificates to manufacturers that iron has been passed by them bearing a tensile strain of 24 tons per square inch, doubtless such iron would be specified for first-class ships, ships built of such iron being granted a higher classification. This would answer all purposes. Mr. Reed wishes to meet and gradually drive bad iron from the market.

I remain, &c.
(signed) *John W. Wass*, M.I.M.E.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 150. —

(M. 7154.)

Messrs. *C. Connell & Co.*, Glasgow.

Scotstoun Shipbuilding Yard, Whiteinch,
Sir, Glasgow, 7 May 1875.

We beg to acknowledge receipt of your letter of the 29th ultimo (M. 4764), which only reached us on the 5th instant, enclosing copy of a clause proposed (by Mr. E. J. Reed, C.B., M.P.) for introduction into the Merchant Shipping Bill now before Parliament, and inquiring what effect, in our opinion, such a clause would be likely to have.

In the first place, we think such a clause would add very materially to the cost of the manufacture of iron and of ships and machinery; and, in the second place, we do not think it would tend to add to the security of life and property at sea, as we are not aware of any ship being lost at sea through being constructed of defective iron. We consider that the test to which iron is put during the processes of preparing it for going into a vessel is amply sufficient. We are afraid that the proposed clause would not work well in every-day practice, but would give rise to a great deal of evasion.

We are decidedly of opinion that the clause is neither necessary nor desirable.

We are, &c.
The Assistant Secretary, (signed) *Charles Connell & Co.*
Marine Department, Board of Trade.

— No. 151. —

(M. 7219.)

Mr. *Robert Napier*, West Shandon, Dumbartonshire.

West Shandon, Dumbartonshire,
Sir, 8 May 1875.

In the absence of my son and partner, who is at present on the Continent, I have the honour to acknowledge the receipt of your letter of the 29th ultimo.

In reply, I beg respectfully to explain, that for the last few years I have been an invalid, and unable to attend to the details of our business. I hope, therefore, the Board will excuse me from saying more at present, in reply to their letter, than it has been my constant practice, for more than 50 years, to make it a point, both with regard to materials and workmanship, that everything in the business of my firm as engineers, and more especially as constructors of steam vessels and their machinery, should be of the best quality. I am very sorry, however, that owing to the almost universal "disease" of shipowners to have cheap vessels, a great temptation has been held out to shipbuilders to reduce the quality

quality. It is possible, therefore, vessels and lives may have been lost from the use of inferior materials, bad workmanship, and ill-judged designs; and the subject is one deserving the utmost attention the Board of Trade can give to it.

I have, &c.

Thomas Gray, Esq., Board of Trade. (signed) *Robert Napier.*

— No. 152. —

(M. 7220.)

Messrs. *Arch. McMillan & Son,* Dumbarton.

Sir, Dock Yard, Dumbarton, 10 May 1875.

In reference to your favour of 29th ult., inquiring our opinion of a clause proposed by Mr. E. J. Reed for introduction into the Merchant Shipping Bill now before Parliament, we beg to inform you, if the tensile and bending strains were to be moderate, we do not think the manufacture of iron would be improved, and the expense and risk incurred, and delay occasioned by testing, would add materially and prejudicially to the cost of iron, and consequently to that of ships and machinery, without adding in any manner to the security of life and property at sea. We do not think the clause would ensure good iron alone being used, and are of opinion it would be much evaded, and that it is neither necessary nor desirable, seeing there is at present no prohibition to shipowners testing iron to be used in construction of their ships.

We are, &c.

The Assistant Secretary, (signed) *Arch. McMillan & Son.*
Marine Department, Board of Trade.

— No. 153. —

(M. 7221.)

Messrs. *Cole Brothers,* Newcastle.

Sir, Newcastle-on-Tyne, 8 May 1875.

Referring to your circular letter of the 29th ult., we beg to answer your questions seriatim, as follows:

The proposed clause, if it became law, would greatly increase the cost of ships; first, by increasing the cost of the iron used in them (probably about 3 *l.* per ton), but chiefly by lessening the power of production by causing an enormous delay in building, as we at present see exemplified in the case of vessels built under Admiralty inspection, which invariably take from twice to three times as long to build as merchant ships of equal size, on account of the stoppage of the work caused by testing the iron. The loss from this diminished production would have to be covered by a larger margin than is now necessary, and thus the trade would be placed at a disadvantage with regard to foreign competition, already considerable.

We do not see how the working of the clause would add to the security of life and property at sea, in the absence of any evidence of a single loss through "bad iron"; in fact, we consider the iron as now generally used for shipbuilding to be quite good enough for the purpose, as, in ordinary vessels, it is principally exposed to tensile and crushing strains without a large measure of ductility being demanded of it.

We do not think the exclusive use of good iron would be ensured by this clause, as it would be impossible to test every single plate, &c., in a ship, and as prices would always have to be based upon the use of the expensive iron which would stand the tests, there would be a premium upon the evasion of the clause proportionate to the difference in price of the "test" iron and ordinary ship iron; this we think a most important point, and trust we have made it quite clear.

But the most objectionable and dangerous feature of the clause is, that it aims

at infringing the sacredness of contracts, the effect of which upon the trade must be simply paralysing, as builders would be completely at the mercy of their customers. The disastrous consequences of this cannot, we think, be exaggerated.

We are, &c.

Thomas Gray, Esq. (signed) *Cole Bros.*

— No. 154. —

(M. 7222.)

Mr. *Robert Scott*, Hull.

Commercial Chambers, Hull,

Dear Sir, 10 May 1875.

I DULY received your favour of the 29th ult. on Thursday, the 6th instant, and would have replied at once, but have been prevented by absence from business; now I wish to observe, that the clause proposed by E. J. Reed, Esq., M.P., for introduction into the Merchant Shipping Bill, will, in my opinion, operate as follows:

It will increase the expense of manufacture, and at the same time reduce the competition in the iron trade, but there can be no two opinions as to the result of using an improved and universal quality of material (wood or iron); it must add to the stability, and consequently the safety of the ship, life, and property.

I doubt very much, however, the practicability of carrying such a law out in general practice, the extra trouble given to both manufacturer, shipbuilder, or engineer, will militate against and prove an inducement for evading the tests.

In my opinion, it is not advisable for Government to interfere between shipowner and builder, as the former has already the power at present to introduce any test or tests into his specification or contract for building either ship or machinery, or for inspecting and testing those already built, to the extent proposed by Mr. Reed, or even more stringent measures, price only being the consideration.

Yours, &c.

Thomas Gray, Esq. (signed) *Robert Scott.*

Board of Trade, Whitehall Gardens.

— No. 155. —

(M. 7223.)

Messrs. *Bolckow, Vaughan & Co.*, Middlesbro'.

Bolckow, Vaughan, & Co., Limited,
General Manager's Office,

Sir, Middlesbro'-on-Tees, 10 May 1875.

IN reply to your letter of the 29th April, asking our opinion as to the probable effect of the new regulation proposed by Mr. Reed, respecting the quality of iron to be used for shipbuilding purposes, we beg to say that we think there would be but one injurious effect, namely, an increase of cost.

From an iron-maker's point of view, which is the only one we claim any right to take, there can be no objection whatever to stipulate that the whole of the iron for ships shall be of best boiler-plate quality, or even of a higher quality still. There is no lack of the necessary skill and material to produce iron of any quality desired, and the selling prices of such iron would settle themselves by the ordinary influences regulating trade.

In our experience, which is extensive and of long duration, there is no ground for saying that ships have been lost or jeopardised because the iron composing them has been of bad quality; and, with the greatest deference, we beg to express our belief that the utmost advantage possible from the proposed new regulation would be insignificant as compared with the injury that must result if iron shipbuilding be checked by any considerable advance in the price of iron.

All inspection of iron involving possible rejection should, so far as the iron manufacturer is concerned, be at his works either before delivery or at the time of delivery, and not after manipulation of the iron in ship yards.

We

We trust we have fully replied to your communication, and we shall at all times be happy to furnish your department with any information we possess.

We have, &c.
(signed) *Bolckow, Vaughan, & Co., Ld.*
per *Edward Williams.*

Thomas Gray, Esq.
Marine Department, Board of Trade.

— No. 156. —

(M. 7224.)

Messrs. *Willoughby Brothers*, Plymouth.

Central Foundry Engine Works and Hammer Mills,
Sir, Plymouth, 6 May 1875.

In reply to your inquiry of the 29th ultimo, respecting the clause for the test of iron proposed to be introduced into the Merchant Shipping Bill:

We are of opinion that such a clause is likely to have an injurious effect on trade, and, further, that it is quite unnecessary, as under present circumstances, the quality of iron is specified in contracts, the buyer at all times having the power of testing at his own expense, and of rejecting if found not in accordance with specification.

We have, &c.
T. Gray, Esq. (signed) *Willoughby Brothers.*

— No. 157. —

(M. 7225.)

Mr. *Alex. Gemmell*, Hull.

Dear Sir, 47, Witham, Hull, 10 May 1875.

In reply to yours of the 29th April, I am of opinion that all ships and steamers should be built of iron of good quality, and be able to stand a test of from 20 to 22 tons per square inch, and a bending strain proportioned to the test. And I am of opinion that the clause proposed by E. J. Reed, C.B., for introduction into Parliament, cannot affect the manufacture or cost of iron of ships or machinery to any great extent, and would be security to life and property at sea, provided that there is care taken in the construction and the workmanship both in the framing, plating, rivetting, and caulking, and that no material be used of less scantling than given in "London Lloyd's Rules," but, if anything, heavier, and that no reduction of plates in thickness at the fore end of any ship or steamer.

I am, &c.
Thomas Gray, Esq. (signed) *Alex. Gemmell.*

— No. 158. —

(M. 7226.)

Messrs. *Dobie & Co.*, Glasgow.

Sir, Govan, Glasgow, 10 May 1875.

Replying to the inquiry in your circular, M. 4764, dated 29th ultimo, we beg to state that our opinion is adverse to the clause proposed by Mr. Reed, M.P., nor do we see that any enactment regarding the testing of iron would be otherwise than delusive and injurious.

We are in favour of leaving the matter to the natural course of demand and supply. Any statutory test would be of doubtful utility, would add to the cost of production, would hinder the workings of commerce, and end in disappointment as to practical results.

We are convinced that, as regards shipbuilding, it is best to leave these topics to be dealt with by the skill of practical experts seeking, in their competition with one another, to meet the legitimate demands of the world for the most fitting instruments to perform the work required; let the Legislature refuse to do more than facilitate education widely by the diffusion of reliable science coupled with careful experiment. In this direction, the Board of Trade may do much good by gradually increasing the number and improving the knowledge of such experts, and they will avoid all risks of harm such as is threatened by Mr. Reed's faulty proposal, which we hope will be rejected.

We are, &c.
(signed) *Dobie & Co.*

Thomas Gray, Esq.,
Board of Trade.

— No. 159. —

(M. 7227.)

Messrs. *S. Hodge & Sons*, Millwall.

Union Iron Works, Millwall, London, E.,
10 May, 1875.

Sir,

In reply to your inquiry of 29th ult., sent to us by the Chief Surveyor to the Board of Trade on 5th inst., as to the effect of Mr. E. J. Reed's, M.P., proposed clause to the Merchant Shipping Bill, we beg to say, we are of opinion it would have a tendency to improve the manufacture of iron, but to increase its cost, since it would generally involve better materials and more careful manipulation, in which case greater security to life and property would necessarily follow; it would no doubt ensure mainly that good iron would be used in ships. We do not see any insuperable difficulty in carrying it out in every-day practice without fear of much evasion; to ensure the use of good and reliable materials, some such tests are highly desirable; we are of opinion, that if the clause be adopted, it should stand in its entirety, as a high tensile result is sometimes shown by an iron of a very inferior character, which we should decline to use either in ships or their appurtenances; therefore the bending (*hot and cold*) strain, or the *per centage extension is absolutely essential* to make the clause useful.

We are, &c.
(signed) *Saml. Hodge & Sons.*

Thomas Gray, Esq.,
Board of Trade, Whitehall Gardens, S.W.

— No. 160. —

(M. 7228.)

The Tyneside Master Shipbuilders' Association, Newcastle.

Tyneside Master Shipbuilders' Association,
52, Dean-street, Newcastle-on-Tyne,
10 May 1875.

Sir,

Your circular letter of the 29th ultimo (M. 4764), addressed to the several shipbuilders on the Tyne, has been brought, together with its enclosure, before a meeting of the members of this association, and I am directed to inform you that they are unanimously of opinion there is no sufficient reason for the enactment of the proposed clause as to testing iron used in shipbuilding, and that should this clause become law it would most seriously hamper the shipbuilding trade.

Replying to your inquiries seriatim, I am instructed to state:—

1st. That the carrying out of a general system of testing would not only add materially to the cost of vessels, by increasing the cost of the iron used, but the delays such a system would cause in building vessels would vastly lessen the powers of production of each individual yard, a source of loss the builder could only recoup himself for by demanding an enhanced price on the diminished quantity of work turned out, and would thereby be placed at a disadvantage in relation

relation to foreign builders, whose competition is now felt. The enhanced cost of building under the system of testing in the proposed clause is not imaginary, but has been fully proved in practice. Members of this association have built vessels of precisely the same character, and of iron of the same quality, the only difference being that some were built under the test system and others not. The result has clearly shown that those built under the test system cost 25 per cent. more than the others, and, apart altogether from the question of price of materials, the time occupied in construction showed a still greater difference.

2nd. That, as no evidence exists as to loss of life or property at sea from the use of iron of too poor a quality in the construction of vessels, it is impossible to see how the testing of iron could in any way add to safety. Almost without exception merchant vessels are now built under the special survey of Lloyd's or other similar societies' inspectors, and good materials and workmanship in construction are thereby fully secured. This system has been found in all respects satisfactory to all concerned.

3rd. That testing would not, more than now, insure the certain use in all cases of a good quality of iron, and that such a system could not be worked in every-day practice, nor could it be organised or carried out in such a way as to prevent its being avoided. The fact of iron to be subjected to a system of tests being of relative higher cost, the inducements for evasion would become greater than at present.

In conclusion, I am directed to state that the members of this association view with alarm the proposal that the purchaser of a vessel may be allowed to decline to accept her in the event of the iron used not standing certain tests. The proposal would, under certain circumstances, be a premium on dishonesty; it strikes at the root of a principle that has always been rigidly and properly upheld in the English law courts, viz., the sacredness of a contract; and its effect will be to place the shipbuilder entirely at the mercy of his contractee, a state of things that could not but be most disastrous to the trade. This association trusts, therefore, that Her Majesty's Government will use their influence to prevent the proposed clause being inserted in the Merchant Shipping Bill now before Parliament.

I am, &c.

Thomas Gray, Esq., (signed) *B. Plummer*, jun.,
Assistant Secretary, Board of Trade. Secretary.

— No. 161. —

(M. 7315.)

Mr. *W. Macgeorge*, Millwall.

Millwall Dock Engineering Works,
Millwall Docks, London,
11 May 1875.

Sir,

In reference to the questions to which you desire me to return an answer, in the circular dated 29th April 1875 (No. 4764), I beg leave to state my opinion as follows:—

I. I think the clause alluded to, and proposed to be introduced into the Merchant Shipping Bill now before Parliament, will have a bad effect on the trade of shipbuilding, inasmuch as it will add considerably to the cost of shipbuilding and to the time required for completing contracts. I believe it will add to the cost by introducing a new element of cost which will have somewhat of a fancy character, and iron merchants will insist on a good margin of profit, to insure themselves from loss against a risk which they cannot control, and great delay will inevitably be incurred in the building yard should a considerable quantity of iron plates be rejected for not standing a rigid test which the place they are to take in the structure of the ship may not require them to stand.

II. I think the public would reap no advantage in point of security, as I do not see how evasion of the test can be prevented. A false security would be engendered.

 III. I am

III. I am not prepared to say some kind of test is not desirable, but I respectfully suggest that only those plates or angles which sustain the chief strains in the girder or ship should be tested, such as the stringer plates, the the sheer strake plates, and the plates forming the bottom of the ship.

I would put the duty of having the iron tested on the shoulders of the iron masters, and before the iron leaves their manufactory. The iron masters already have trade marks on their iron, denoting the different qualities, and I think they should be made responsible for their marks being honest.

I am, &c.

Thomas Gray, Esq. (signed) *Wm. Macgeorge.*

— No. 162. —

(M. 7316.)

Mr. *W. Waters*, London, Chatham, and Dover Railway.

Sir, Dover Harbour, 7 May 1875.

In reply to yours of the 5th, enclosing a copy of a clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, relative to a standard test of iron used in building ships and their machinery:

I think such a clause would have a very beneficial effect in causing greater safety to both life and property at sea, and I see no reason why it should not work well in every-day practice.

I am, &c.

(signed) *W. Waters,*
Marine Superintending Engineer,
L. C. & D. Ry. Co.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 163. —

(M. 7317.)

Mr. *James Casey*, London.

Sir, 10, Philpot-lane, London, 10 May 1875.

Referring to your circular letter of the 29th ultimo, received by me, enclosing a copy of a clause proposed by E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, and inviting my opinion upon the said clause, "as to what effect it would have or add to in securing life or property at sea:"

My opinion is, that it would not be beneficial to have such a clause inserted in the Merchant Shipping Bill, for the very reason that a testing machine does not prove the best quality of the iron most suitable for shipbuilding.

That iron can be made to stand a tensile strain of a testing machine that the slightest crushing strain or percussion force would break when in use, making it equally as dangerous to life and property.

That the agents or assignees are not, as a rule, qualified to be in the position as proposed in the clause, owing to their want of technical knowledge as judges of iron when tested; and a manager of a yard, having his employers' interest at stake, would take good care that the samples that the agent or assignee selected for testing should pass the ordeal, whilst the bulk of the material would pass unchallenged.

"That the agent or assignee shall not be bound to accept such iron or ship, any contract notwithstanding," &c., &c.

This interferes between man and man in a contract, and no doubt would suit gentlemen of the long robe well, but when there are, and likely to be, such fluctuations in the value of shipping property, in some cases 40 per cent., it would suit the builder, or, *vice versâ*, the agent, to throw up the contract after months being spent in building the vessel, to get the benefit of the open market, and lead to endless litigation, and one or the other would, on signing a building contract,

contract, be signing and have the preliminaries of a lawsuit patronised by the Government to aid speculative shipowners. No; my opinion is, a question of this kind can never be left to the option and conscience of go-betweens, but must be dealt with in a generous and liberal manner, and at the same time making it commercially worth while of shipowners and builders to have the best article that the market can afford. How is this to be done is the question. I believe it can be done by the Board of Trade (which, of course, I recognise as the Government) giving instruction and information that an official book is kept, or it could be added to the book periodically printed and now issued by the Board, giving the certified list of passenger vessels (ships and steamers) for all new iron ships building from 1st January next, the actual maker of the iron of which the vessels are built.

2. That every beam plate and angle iron have the actual maker's name rolled in and on the iron, either in stamp or letter, similar to the Blenavon or Consett, in ships, or Lowmoor or Bowling in boiler plate, and that the same shall be visible in plates on the outside of the hull when in place and permanently fixed, and in angles as it is now placed by the above firms in running letters.

3. That invitations should be issued to *bonâ fide* makers of iron, not merchants, by the Board to send in to the Government samples of their actual make for shipbuilding purposes, and a register be kept for the information of the public, in the same way as the Admiralty record of qualities of steam coal. And you may depend upon the fact that a merchant or shipowner would specify, in nine cases out of ten, the material that his ship was to be built of and no other, and pay the price for it; taking for his guidance the official record of actual facts placed before him by an authority above suspicion.

I have, &c.
(signed) *James Casey*,
Consulting Engineer and
Surveyor of Iron Shipping.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 164. —

(M. 7319.)

Messrs. *J. Gurney* and *S. G. Buxton*, Norwich.

Norwich, 11 May 1875.

Sir,

As owners of the Millwall Iron Works, and in reply to your circular (M. 4764) of the 29th ultimo, forwarded by the Chief Surveyor on the 5th current, we beg to say:—

That in our opinion the clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill would, in general, be beneficial, and, in particular, would not be unfavourable to the manufacture and cost of iron and ships on the Thames. Good iron and workmanship are the rule on that river, and therefore the imposition throughout the kingdom of a test of quality, provided the limits were fixed, and used practically and not vexatiously, would tend to diminish the disadvantages under which the Thames iron and shipbuilding trade labours in competing with the ports nearer the iron districts.

I am, &c.
(for Self and *S. G. Buxton*)
(signed) *John Gurney*.

The Assistant Secretary,
Marine Department, Board of Trade.

— No. 165. —

(M. 7320.)

Messrs. *S. P. Austin & Hunter*, Sunderland.

Wear Shipbuilding Yard, Sunderland,
11 May 1875.

Sir,

In reply to your circular of the 29th inst., with regard to the clause proposed by Mr. E. J. Reed, M.P., for introduction into the Merchant Shipping Bill, we are of opinion that the quality of iron used in shipbuilding might, and in many cases should, be improved; but we do not think the mode suggested by Mr.

Reed would have the desired effect. The best iron does not necessarily bear the highest tensile strain, and it is not essential that all iron used in the construction of a vessel should be of the same quality or tried by the same standard. Certain parts of the structure are of much greater importance and are exposed to much greater strains than others, and it is the custom of some of the best builders to use iron of better and more certain quality (as well as of greater thickness) for such parts.

The clause proposed might easily be evaded, and might, in other cases, bear very hardly on the manufacturer or shipbuilder.

We consider that iron could be more effectually dealt with by the surveyors of the Classification Committees now in existence, than by the proposed legislation. All vessels are now built under the survey of one or more of the societies, and their surveyors have the best opportunities of examining the quality of the iron used in shipbuilding.

We are, &c.

Thomas Gray, Esq., (signed) *S. P. Austin & Hunter.*
Assistant Secretary, Board of Trade.

— No. 166. —

(M. 7367.)

Messrs. *Money Wigram & Sons*, Blackwall.

Blackwall Yard, London, E.,
7 May 1875.

Sir,

In reply to your letter (M. 4764), no practical difficulty exists in procuring iron for shipbuilding purposes of quality and strength to comply with a stated standard (say the Admiralty regulations); and any person, when contracting for building a ship, can introduce a clause in the specification requiring the builder to use materials of such quality, and to have them tested to his satisfaction, retaining the right of rejecting all such as do not comply with the tests.

The common law of contracts would be quite sufficient for the enforcement of such an agreement.

We do not, therefore, see how the proposed clause would add to the security of life or property; for if owners do not now think it worth while to pay the extra cost that will give them a superior article, they are scarcely likely to take the very great additional personal trouble of testing iron at their own expense at a place licensed by the Board of Trade, of which at the present time no great number exist; and remembering that the Board have just closed one that existed in London, we presume they do not contemplate the opening of testing places at each port where iron vessels are built.

Holding these opinions, we fail to see how any beneficial result would be obtained, but we can see how very readily opportunities might be taken of the proposed clause that would lead to endless disagreements and law.

We must further say we are strongly opposed to all legal enactments that tend to put restrictions on trade, and cannot conceive why shipbuilding is that exceptional trade in which it is necessary that the details are to be controlled by Act of Parliament.

We remain, &c.

The Assistant Secretary, (signed) *Money Wigram & Sons.*
Marine Department, Board of Trade.

— No. 167. —

(M. 7369.)

Messrs. *Caird & Co.*, Greenock.

Sir, Greenock, May 1875.

We acknowledge receipt of your circular of the 29th April 1875 drawing our attention to a Clause proposed by Mr. Reed for introduction into the Merchant Shipping Bill, and soliciting our opinion upon it.

The question of testing iron for shipbuilding purposes has been constantly before us, and we have carefully considered for many years what effect it would be likely to have on the manufacture and cost of iron ships.

Our experience goes to show that a careful survey (such as that of Lloyd's Surveyors) would be much more efficacious in securing the use of iron of uniformly good quality than any system of tests. Instances have occurred in our own practice in which we have rejected iron as of insufficient quality which has nevertheless stood a considerable per-centage over the usual Government tests. It is obvious to every practical worker in iron that it is impossible to fix an arbitrary standard of tensile and bending strains which shall embrace every requirement of shipbuilding.

Iron, which has to be bent to great angles, must have great ductility at a corresponding sacrifice of resistance to tensile strain, whereas iron, which in its position in the ship takes the strain in the direction of its fibre, must be made more crystalline to stand great tensile strains at the expense of ductility.

We fail to see how any arbitrary system of tests would insure the adoption of iron more suitable to meet the multifarious strains to which the various parts of a ship are subject than at present under the ordinary working tests and the careful supervision of competent surveyors.

At present ironmakers produce plates of from $\frac{3}{4}$-inch to $\frac{7}{8}$-inch thick, which are in actual practice bent cold to an angle of about 45 degrees, and this we regard as a sufficient test of ductility.

A tensile test is unimportant, for, since it is cheaper to produce a hard plate, it is a reasonable presumption that the maker will not err on the side of undue softness. The practical tests of sheering with short cutting sheers, and punching holes near the edge of the plate, as at present in universal use, are, in our opinion, much more satisfactory than what is proposed under this clause; because they are much more universal in their application, being applied to every plate. Such tests prove the homogeneity or uniformity of quality of the iron, which a special test of a small selected per-centage of the bulk can never do.

The method proposed in this clause is open to great evasion. It is a notorious fact that a skilful manipulator can put inferior iron through the most severe tests. The temperatures at which iron, manufactured in different districts, should be tested, are very various and very uncertain, and no one standard could be adopted which would be fair to all districts.

Again, such tests would necessarily relieve builders of all responsibility in connection with quality of material, and we doubt whether owners would approve of the change. It would introduce a divided responsibility, throwing the onus of proof and of test on the owners.

As regards the effect of the introduction of a binding test on the cost of production of iron ships, there cannot be two opinions. Makers will not guarantee iron for less than 40*s.* per ton. Under Lloyd's present rules for the construction of merchant ships for their highest class, the proportion of weight of iron to the gross register tonnage is from 50 per cent. to 70 per cent. Iron ships would, therefore, cost from 20*s.* to 28*s.* more per gross register ton, than under the present system.

In the face of the advances which foreign countries are making in competition with our shipbuilding trade, we think it would be very suicidal to take any steps which would increase the cost of production here, and place us at a disadvantage.

From the statistics of shipbuilding in Germany, Norway, and America, which you have doubtless at hand, we cannot but look forward to a steadily increasing competition. We have already instances in which Hamburg and Kiel builders have succeeded in securing contracts for iron ships, in competition with Clyde and

east coast builders, and it is well known that, were it not for the greater expedition with which the builders of this country can execute orders, none but those for the very largest class of vessels would be placed here by foreign owners.

This advantage of greater expedition has been, of late years, very much lessened by the diminution of the hours of labour, and we fear that the introduction of a system of tests would dissipate it altogether.

Licensed testing machines are very few, and builders in the vicinity of one would gain a great advantage in time and cost of transmission over those at a distance.

But the terms of the clause do not make it obligatory on either owner or builder so to test the iron. At present, anyone contracting for the construction of a ship has power to insert a proviso that a Government, or any other, test should be applied to the iron. If the proposed clause were in force, builders and owners would still have power to agree that the iron should not be tested, unless the terms ("any contract notwithstanding") are directed against such a contingency. If such special agreements may be made, we feel certain that the clause would be quite ineffectual. There would be no obligation on owners to adopt a course which, for reasons of additional cost, delay, and unsatisfactoriness, would be objectionable to them, and it is unreasonable to suppose that they would elect to do so.

Even if the adoption of a system of theoretical tests were calculated to add to the security of life and property at sea, which we dispute, the optional character of the clause as proposed would, we feel sure, entirely nullify any such effect.

Under all these circumstances, we are of opinion that the clause under consideration, so far from being either necessary or desirable, would be positively prejudicial to the shipbuilding interests of this country; and we trust that the Board of Trade, as the guardian of those interests, will not give its sanction to a measure whose only effect would be to fetter industrial energy.

We thank you for having given us this opportunity of expressing our opinion to you directly.

We are, &c.

The Assistant Secretary, Marine Department, Board of Trade.

(signed) *Caird & Co.*

— No. 168. —

(M. 7370.)

Mr. *G. S. Gulston*, Sunderland.

Sir, 11 May 1875.

In reply to your letter of the 29th ult. received yesterday, asking for my opinion on the Clause proposed by Mr. Reed for introduction to the Merchant Shipping Bill now before Parliament, I am of opinion that unless Government are prepared to go into the question of scantling as well as the strength of material, the clause will be useless, because if the initial strength of iron were increased the quantity would be decreased. I am also of opinion that such a clause, by increasing the price of iron, would, "by increasing the cost of vessels," place shipbuilders in this country at so great a disadvantage as to drive the trade to other countries. I also consider that it would work very badly in every-day practice by retarding work and placing builders completely in the hands of the purchasers, and would in the main add little to security of life and property at sea.

I have, &c.

Thomas Gray, Esq.

(signed) *G. S. Gulston.*

— No. 169. —

(M. 7371.)

Mr. *W. Ramshaw*, South Eastern Railway, Folkestone.

Steam Packet Department, Folkestone,
Sir, 11 May 1875.

Yours of the 5th May (*re*) Test of Iron 28*a*.

I am of opinion that such a clause as proposed by E. J. Reed, M.P., would be beneficial to the shipping interest generally. I do not see how it is possible to certify to the strength of any iron ship, unless you know the material of which such a ship is built.

To do so I am of opinion that the clause in question is a very proper one, and would not (when well established) increase the cost of construction beyond the difference of present prices of good and bad iron.

With regard to the amount of test, I think it should be left in the hands of more competent judges than myself, such as the president and leading members of the Iron and Steel Institute.

I most respectfully beg to state that I think it is quite time some revision be made in the method of branding iron plates, the present system being in my opinion likely to mislead persons not well acquainted with the nature of the brands; for example, best Staffordshire is nearly the worst plates you can have from that district. In conclusion, if such revision were made of the brands, and such brands represented to mean any particular test (that may be decided upon) I think it would simplify the examination of plates to a very great extent.

I have, &c.
The Assistant Secretary, (signed) *W. Ramshaw.*
Marine Department, Board of Trade.

— No. 170. —

(M. 7373.)

Messrs. *T. & G. Rennie*, London.

Albion Iron Works, and Marine Steam Engine Manufactory,
Holland-street, Blackfriars-road, London, S.E.,
Sir, 12 May 1875.

We have to acknowledge the receipt of your circular, dated 29th April 1875, No. 4764, enclosing a copy of a Clause proposed by Mr. E. J. Reed, C.B., M.P., for introduction into the Merchant Shipping Bill now before Parliament, and asking our opinion of the effects such a clause would be likely to have,—

1st. On the manufacture and cost of iron and of ships and machinery.

2nd. Whether it would add to the security of life and property at sea.

3rd. Whether it would ensure that good iron alone is used in ships.

4th. Whether it would work well in every-day practice without fear of evasion.

5th. And generally how far such a test is necessary or desirable.

In reply we beg to say that,—

1st. The cost of iron would be increased and consequently the cost of ships and machinery, which probably would have the effect of shipowners and foreign Governments ordering their ships in foreign countries where no such regulations exist. However, should such a clause become law, we would suggest that the manufacturers of the iron should have the iron tested and branded before leaving their works, in the presence if necessary of certain officers appointed for the purpose; that there should be certain qualities, and the quality marked thereon which should be stamped on each piece; and it should be at the shipbuilder's option to order and be sure of

obtaining the different qualities for the different classes of work for which he proposes to use it.

2nd. It is a difficult matter to answer this question, but it seems that the security of life at sea more depends on the construction of the ship than the quality of the iron, for it is quite possible that a heavier material of inferior quality may in many cases be less liable to rupture than a very good quality of less scantling. The class of workmanship also materially enters into the question.

3rd. and 4th. We think it would be very likely to be evaded, for to carry strictly out that every piece of iron used in ship construction should be tested, would involve such a minute inspection and cause so much annoyance and delay, that it would be practically impossible to carry it out, and would be evaded in a variety of ways; and

5th. We do not think it advisable to put such impediments in the way of trade, and it is a question whether there are really authenticated examples of a ship being lost from defect of material alone, but rather from construction and dimensions of the particular materials used.

We are, &c.

The Assistant Secretary,
Marine Department, Board of Trade.

(signed) *T. & G. Rennie.*

— No. 171. —

(M. 7374.)

Messrs. *Laird Brothers,* Birkenhead.

Birkenhead Iron Works, Birkenhead.
May 1875.

Sir,

In reference to your circular M. 4764, 29th ultimo, received per Mr. W. C. Taylor, we beg to say:

The clause proposed by Mr. Reed in the state presented to us is so extremely indefinite, that any opinion on its probable effect must be general.

The adoption of an arbitrary scale of test such as that indicated would be unreasonable, and likely seriously to interfere with the general course of trade.

Its first effect would be to increase the price asked by manufacturers of iron, for although iron of the quality usually supplied by good makers might be, and we find is, capable of sustaining reasonable tests, yet the risk of passing will rest with them, whilst the user of the iron will be put to the expense of testing, preparing the tests, sending them to a public machine probably at some distance from his works, where probably delay will, and in fact must, arise unless establishments as required by circular on a very large scale are erected in all localities where shipbuilding is carried on.

This extra price of iron and the expense and delay must necessarily increase the cost of ships and machinery.

We do not think security to life and property at sea would be greatly increased if such a system of test were introduced. No instance has come to our knowledge of ships giving way from defective materials.

Such results have usually been from deficiency of workmanship, insufficiency or bad distribution of material, improper cargo, stowage, or overloading.

Whether good iron alone would be used in ships under such test would depend upon the conditions, as it is undesirable to have a high tensile strain at the expense of good ductile quality.

We do not consider it would work well in every-day practice, but prove a serious drawback to the conduct of business, although if enacted as a law of the land there would be no fear of evasion by respectable contractors.

It does not appear to us that such a test is necessary, or that sufficient public advantage can possibly arise out of it to counterbalance the great disadvantages.

The classification societies have regulations which are sufficient to ensure the quality of material requisite if properly attended to, and shipowners can always in their contracts make such other provisions as may be necessary.

For general work we usually make our contracts of iron of a quality to satisfy the Lloyd's and Liverpool Register requirements; and we test the iron to see that

that it does come up to the mark, and advise the manufacturer from time to time of the result. We have a testing machine at our works.

The Admiralty, again, have a higher and much more rigid system of test, indeed so much so that comparatively few manufacturers will accept it, and then only at such an enhanced cost as would practically stop shipbuilding here and drive it to other countries where the trade is not fettered in this way.

I have, &c.
(signed) *Laird Brothers.*

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 172. —

(M. 7375.)

Mr. *R. Irvine*, London.

Inns of Court Hotel, London,
13th May 1875.

Sir,

I BEG to acknowledge the receipt of your letter of the 29th April last, numbered M. 4764, which reached me here on the 11th instant, enclosing a copy of a Clause proposed (by Mr. E. J. Reed, C.B., M.P.) for introduction into the Merchant Shipping Bill now before Parliament, and requesting my opinion on the following questions :—

1. What effect would such a clause be likely to have on the manufacture and cost of iron, and of ships and machinery ?

2. How far it would add to the security of life and property at sea ?

3. Would it be likely to attain the desired end of ensuring that good iron would alone be used ?

4. Whether it would work well in every-day practice, without fear of much evasion ?

5. How far such a test is necessary or desirable ?

In reply to the above questions I have the pleasure of stating my opinion thereon as follows :—

Question No. 1.—What effect would such a clause be likely to have on the manufacture and cost of iron, and of ships and machinery ?
Reply.—The proposed clause would not improve the manufacture of iron, whilst it would much increase the cost of both ships and machinery.

Question No. 2.—How far it would add to the security of life and property at sea ?
Reply.—It would not add to security of life and property at sea.

Question No. 3.—Would it be likely to attain the desired end of ensuring that good iron would alone be used ?
Reply.—No; the rules of Lloyd's Register of British and Foreign Shipping are sufficient for the required purpose.

Question No. 4.—Whether it would work well in every-day practice, without fear of much evasion ?
Reply.—It would not work well in every-day practice, and would tend to much complication, and be subject to evasion.

Question No. 5.—How far such a test is necessary or desirable ?
Reply.—Such a test is neither necessary nor desirable.

The test which is at present in force under Section 3 of Lloyd's Register of British and Foreign Shipping as to the quality of iron to be used is, in my opinion, quite sufficient to ensure the desired end. This Section provides that:

" The whole of the iron to be of a good malleable quality, to be subjected to " tests, at the discretion of the surveyors. Brittle or inferior material to be " rejected."

"All plate, beam, and angle iron, to be legibly stamped in two places with the "manufacturer's name, or trade mark, and the place where made, which is also "to be stated in the report of survey."

In practice, the test under this section is made by placing the plate on an anvil, and striking it with a sledge hammer, which test is more to be depended upon than the steady tensile, or bending strain, suggested by the proposed clause.

I am, &c.

The Assistant Secretary, (signed) *Robt. Irvine.*
Marine Department, Board of Trade.

— No. 173. —

(M. 7376.)

Messrs. *R. & H. Green,* Blackwall.

Sir, Blackwall, E., 11 May 1875.

In reply to your letter of the 5th instant, enclosing a memorandum from the Board of Trade, inquiring what, in our opinion, would be the effect of Mr. Reed's proposed Clause for the new Merchant Shipping Bill, on the testing of iron, we have the pleasure to inform you, 1st. That we consider the effect of such a clause would most decidedly be beneficial to the manufacture of iron, and of iron vessels and machinery, though at the same time their cost would certainly be higher. 2nd. It would be difficult to state "how far" this clause would add to the security of life and property at sea, but it is obvious that in many cases security must be increased by good materials having been employed in place of bad. 3rd. In all the iron ships constructed for the Navy, tested iron is alone employed, and without doubt the iron in these ships is much superior to that employed in the great majority of merchant vessels. 4th and 5th. We think it might be difficult to have such tests applied to iron employed in small and low-classed vessels, but we are strongly of opinion that every vessel which aspires to have the "Special Survey" mark against her name in Lloyd's, or any other registry of shipping, should, without doubt, have all her iron tested in the way proposed.

We have, &c.

To the Assistant Secretary, (signed) *Richard & Henry Green.*
Marine Department, Board of Trade.

— No. 174. —

(M. 7377.)

Messrs. *W. Simons & Co.*, Renfrew.

London Works, Renfrew,
Sir, 12 May 1875.

In reply to your communication of 29th ultimo, we beg to state:—

1st. The effect of Mr. Reed's proposed Clause would be to increase the cost of iron and ships slightly, and it would not suit for machinery.

2nd. We do not believe it would add to the security of life and property at sea.

3rd. We think it would be likely to attain the desired end of insuring that good iron alone is used in ships.

4th. We think a suitable test is necessary and desirable, but that the iron should be tested and stamped by a Government officer, *at the ironworks where it is made,* and that such iron should be purchased, based *on such stamps and test.* The officer should be resident there as in the case of distilleries, &c.

Yours, &c.

The Assistant Secretary, (signed) *W. Simons & Co.*
Board of Trade, London.

— No. 175. —

(M. 7378.)

The Consett Iron Company, Blackhill, Co. Durham.

Consett Iron Works, Blackhill, Co. Durham,
Sir, 12 May 1875.

We are obliged by your letter, marked M. 4764, dated 29th ult., and regret that the writer's absence from home prevented his attention to it earlier.

With regard to the Clause proposed by Mr. Reed for introduction into the Merchant Shipping Bill, we, as large manufacturers of iron ship-plates, probably the largest in this or any other country, beg leave to approach the subject as manufacturers, and in this capacity only we make the following observations :—

Our output of iron plates for shipbuilding exceeds 50,000 tons of iron per annum, and this is equal to plates for about one ship weekly of 3,000 tons. We supply the large builders on the Clyde, the Tyne, the Thames, and the Mersey, and in addition to these we supply English and Foreign Governments with large quantities. We also supply iron-plates to all parts of this country, and for foreign consumption, for all classes of engineering purposes.

We find there is abundant energy, competition, and skill with these large building firms, and we respectfully submit that we as iron manufacturers have for a long time past succeeded in meeting the wants of these very skilful and highly practical people. There is also abundant skill on the part of the manufacturers of iron to produce any quality requisite for shipbuilding, and as manufacturers we have no objection to the demand for plates of a higher quality so long as we get an equivalent in price ; but we venture to say, that our belief is that the introduction of the clause proposed by Mr. Reed will have the immediate effect of increasing considerably the cost of plates, and seriously adding to the cost of construction of ships.

We are not aware that it has yet been shown that any ships have been lost owing to defective iron, nor do we think the clause would add to the security of life and property at sea, and we think it highly probable that interference with the present open competition of shipowners and shipbuilders would discourage individual rivalry in excellence of construction, and check the progress of iron shipbuilding, and thus seriously interfere with the commerce of the country.

With reference to the latter paragraph in your letter, we have grave doubts as to the possibility of the clause working well in every-day practice.

As makers of plates, it will be obvious to you that in delivering thousands of plates weekly we cannot carry on our commercial relations with the consumers of the plates otherwise than having the final reception of the iron made and disposed of at the place of manufacture, and not at the ship yards during process of construction.

We need not say that any further information required shall have our careful attention ; and if we have not fully replied to your letter, we shall have much pleasure in adding any point required.

I am, &c.
For Consett Iron Company (Limited),
(signed) *W. Jenkins*,
General Manager.

To the Assistant Secretary,
Marine Department, Board of Trade.

— No. 176. —

(M. 7379.)

Messrs. *A. Leslie & Co.*, Newcastle.

Iron Ship Building Yard,
Sir, Hebburn, Newcastle-upon-Tyne, 12 May 1875.

We beg to acknowledge receipt of your circular letter of 29th ultimo, and to say that we deferred reply till the matter should be fully discussed at a meeting of the Master Shipbuilding Association of this district. Such meeting was held on Friday last, when the secretary was instructed to convey to you the unanimous opinion of the Association on the subject.

While quite concurring in the views expressed in that reply, we desire further to point out that the method proposed by Mr. Reed for carrying into effect any resolution in regard to testing is most seriously at fault; and should a system of testing iron be determined on, some more feasible plan must, in our opinion, be adopted.

We may state that in all our contracts for iron, for some years past, we have been in the habit of securing our right to be supplied with a quality equal to a specified standard, and have insured the proper carrying out of that stipulation by inspection of the testing at the maker's rolling mills in the way usually adopted under Government inspection, of all iron made for us.

If all iron for shipbuilding purposes is to be tested, such a method as that, carried out at the place where the iron is manufactured by properly qualified inspectors appointed by the Board of Trade, is the only one, we think, that will in any way work economically and to advantage, while fixing at same time where responsibility must rest. It will be seen that the cost of conveying thousands of tons of iron away from the place of manufacture intermediately to some public testing machine would be immense, and would entail an expense which the shipbuilder could not fairly be made to bear.

The proposal also to make it open to a purchaser to cancel a contract, and throw any vessel on the hands of the builder during construction or otherwise, should a plate be found unequal to the test applied, is most objectionable and quite at variance with the law of contract; constant and serious disputes must inevitably result, and a way would thereby be opened up to roguery and fraud. Such a scheme indeed would be productive of nothing but evil, unless responsibility is fixed; and if systematic testing is to be resorted to, it can in the interest of trade be done only in the way we have pointed out.

We are, &c.

Thomas Gray, Esq. (signed) *And. Leslie & Co.*

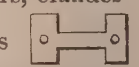
— No. 177. —

(M. 7447).

Messrs. *Mounsey & Foster*, Sunderland.

South Dock Iron Ship Yard, Sunderland,
13 May 1875.

Dear Sir,

We have your favour of the 29th of April respecting the testing of iron to be used in the construction of ships, and in reply beg to say, that, in our opinion the clause as it stands would be detrimental to the interests of shipowners, ironmakers, and shipbuilders, inasmuch as the power to test iron would be placed in the hands of the shipowner, or any one he may choose to appoint, however unfit he may be to adjudicate as to the quality of iron; we may here cite an instance; we have this year been building a vessel of 800 tons, she is now finished, and classed 100 A 1, Lloyd's, and 20 years in the Liverpool book. The captain who was overlooking this ship, at the instigation of her owners, clandestinely takes a piece of iron from our yard, and has it prepared thus  and then takes it to the chain and anchor test, where it only stood a strain of some 14 tons. We may here give it as our opinion that the mode of applying the strain to chain cables is totally unfit for plate testing, as the strain indicator is not sufficiently sensitive, the consequence being that the plate breaks before the full strain to which it has been put has been registered; this, together with the absurd way in which the iron was shaped, explains why the piece of iron in question stood so small a strain. A few days subsequent to the above test, we prepared properly six pieces of plate from the same vessel, made by the Skerne Ironworks Company, Darlington, and we had five of the pieces tested at Messrs. Doxford's, Government certified testing machine, before four of Lloyd's surveyors and two of the Liverpool underwriters' surveyors, and these pieces stood a tensile strain, ranging from 22 to 27 tons, with a fair per-centage of extension; the remaining piece was tested at the anchor test, and the strain indicated only 17 tons, although it was identically the same quality as the pieces which stood so good a strain. The captain referred to, after a little time, wrote us a letter of apology, in which he says, "I confess that I am entirely ignorant of the quality

of

of iron generally, the strain to which it should be put, or the mode of preparing same for testing, and consequently the result obtained by me is valueless." You will readily see that if an individual can act in the way indicated whenever he may think fit, as in the case cited, it would be most prejudicial and detrimental to a shipbuilder's character and interest. If it is eventually considered necessary to have the iron tested at all, that is, beyond the present requirements of Lloyd's and Liverpool registry, we would recommend that in all cases it should be conducted at the maker's works, and the iron properly stamped and certified before leaving; this should be done under the supervision of a surveyor, or surveyors, practical men, and none other specially appointed, and we think that if a not too rigid test were imposed it would have a good effect, and the cost of material per ton would not be much increased. The minimum tests we should advocate would be 21 tons tensile strain, with an extension of 5 per cent., and bending cold to 25°. We may add that we have generally found that if the iron stands the strain to which it must of a necessity be put in the ordinary working during the construction of a vessel, that it will stand any formal reasonable test.

We are, &c.

Thomas Gray, Esq. (signed) *Mounsey & Foster.*

— No. 178. —

(M. 7448.)

Mr. *W. Adams*, Great Eastern Railway, London.

The Great Eastern Railway,
Locomotive Carriage and Waggon Department,
Dear Sir, Stratford, E., 13 May 1875.

Replying to your letter of 6th instant, the plan proposed by Mr. Reed might probably work very well, but I think it would be simpler for the firm ordering a ship to specify that a certain per-centage of plates and bars should be tested at the contractor's works in the presence of their agent, and if any of the pieces failed to stand the test, the whole should be rejected.

I have no actual experience to enable me to say to what extent the cost of a ship would be increased by insisting upon the iron being tested, but I have no doubt the result would justify the extra expense incurred.

I am, &c.
(signed) *W. Adams.*

— No. 179. —

(M. 7568.)

Messrs. *Smith, Pender, & Co.*, Millwall.

Millwall Graving Dock (inside Millwall Docks),
Sir, London, E., 15 May 1875.

In reply to the inquiry (M. 4764) of the 29th April 1875, concerning the effect of the Clause proposed (by Mr. E. J. Reed, C.B., M.P.) for introduction into the Merchant Shipping Bill with which you have honoured us, and to which we have given our best attention, we beg to say that—

(1.) By a standard quality being fixed for the iron used in ships and machinery, these productions would be to a certain extent guaranteed, and the manufacture somewhat improved. The cost of iron might be increased, but not considerably, provided the tests decided were moderate; the cost of ships and machinery would also be increased, but, perhaps, not in exactly the proportion due to the increased cost of the material, partly owing to the greater ease of working a superior iron, and partly to such iron never unexpectedly proving wholly unfit to be worked into the form required.

(2.) Greater security of life and property at sea would follow any improvement in the construction of the ships, in cases of collision, taking the ground, &c.

(3.) The use of good iron would be to a great extent insured.

(4.) The clause would be workable, and not open to much evasion, provided that sufficient supervision were exercised over the work in progress.

(5.) Generally such test for iron is desirable, so that the quality of any particular brand may be absolutely certain.

In addition to the above we should suggest that the marks denoting the quality of the iron should be placed on both sides of the plates, and on several places on the bars, &c. Also that for ships it might, perhaps, be advisable to use two qualities of iron, the inferior quality for such parts (as the bunkers, some bulkheads, &c., all of which should be specified) where substance is required to resist oxidation, or wear rather than quality to resist actual strain. If, however, this might aid evasion of the clause, the use of but one quality might be preferred.

We have, &c.
signed *Smith, Pender, & Co.*
J. F. Wampen.

Thomas Gray, Esq.,
Marine Department, Board of Trade.

— No. 180. —

(M. 7570.)

Messrs. *R. & J. Evans & Co.*, Liverpool.

Brunswick Graving Dock, Liverpool,
Sir, 14 May 1875.

OUR opinion of the Clause proposed to be introduced into the Merchant Shipping Bill by Mr. E. J. Reed, M.P., is as follows:—

1st. With such a law in force the cost of iron would be very much increased; ironmasters and iron shipbuilders would be deterred from making contracts, and a falling off in iron shipbuilding would ensue.

2nd. It would have no effect whatever on the security of life and property at sea, as, in repairing ships that have been built within the last 10 years, we, in our experience, have not met a case where the quality of iron was at fault, but a want of material, bad distribution, bad workmanship, over-loading, or bad stowage have been the cause of complaint. Every case of foundering and dismasting of sailing-ships can be traced to bad loading; and in disasters to steamers, bad loading and deficiency of material for their extreme length have been the main cause.

3rd. The quality of iron for ship plates and angles supplied for shipbuilding is generally good, and is sufficiently tested in working, and if found not to stand that test, is returned to the makers, who are bound to exchange it.

We do not think any other test of the quality of iron is necessary, but think such a system of testing as suggested in the clause, would be a constant and serious obstruction to carrying on shipbuilding.

Yours, &c.
Thomas Gray, Esq. (signed) *R. & J. Evans & Co.*

— No. 181. —

(M. 7571.)

Lloyd's Register of British and Foreign Shipping.

2, White Lion Court, Cornhill, E.C.,
Sir, 14 May 1875.

I AM directed to acquaint you that your circular letter, dated 29th April, addressed to Mr. Parker, the chief engineer surveyor to this society, and transmitted to him by Mr. Traill, the chief surveyor to the Board of Trade, enclosing copy of a Clause proposed by Mr. E. J. Reed, M.P., for introduction into the Merchant Shipping Bill now before Parliament, and inquiring what, in Mr. Parker's opinion, the effect of such a clause would be likely to have on the manufacture

manufacture and cost of iron, &c., has been duly submitted by him, through me, to the committee.

I am to state that the society's surveyors can only furnish their opinion on such a subject to the committee.

The committee being impressed with the great importance of this question to the mercantile marine of this country, in which they naturally feel a deep interest, have, although not invited, given the matter their careful and serious consideration; and I am instructed to intimate, for the information of the Board of Trade, that, in their opinion, the requirements as to the quality of iron set forth in Section 3 of the rules of this society, for the construction of iron ships, of which a copy is given on the other side, adequately provide for the object contemplated. Enclosure, No. 1.

I am also to send you the accompanying copies of circular letters to the society's surveyors, numbered 208 and 330, which the committee believe may interest the Board, as illustrating the action they have taken, as the subject has, from time to time, occupied their attention. Enclosures, Nos. 2 and 3.

I have to add, for the further information of the Board, that the committee do not think the clause suggested by Mr. Reed is necessary, and believe it would be open to very serious objection.

I am, &c.
(signed) *B. Waymouth*,
Secretary.

T. Gray, Esq.,
Assistant Secretary, Marine Department,
Board of Trade.

Enclosure 1, in No. 181.

COPY of the Rules, Section 3, for the Construction and Classification of Iron Ships.

Quality of Iron.

THE whole of the iron to be of good malleable quality, to be subjected to tests at the discretion of the surveyors. Brittle or inferior material to be rejected.

All plate, beam, and angle iron to be legibly stamped in two places with the manufacturer's name or trade mark, and the place where made, which is also to be stated in the report of survey.

Enclosure 2, in No. 181.

(No. 330.)

Lloyd's Register of British and Foreign Shipping,
2, White Lion Court, Cornhill, E.C.,
19 November 1874.

Sir,

THE attention of the committee having been recently called to the quality of the iron used in the construction of iron ships, and there being reason to believe that in some cases it is of inferior quality;—

I am directed, with allusion to the committee's circular letter of the 6th May 1867 (numbered 208), to again urge the surveyor's to exercise increased vigilance in their inspection of vessels while building, and to satisfy themselves of the quality of the iron used for shipbuilding, by examining the result of punching, shearing, planing, bending, &c. of the plates and frames; or, as the case may be, by applying special tests, if deemed necessary.

In the event of your experiencing difficulty in dealing with cases where the iron is of inferior quality, I am to request you will at once bring the circumstances under the notice of the Committee.

I am, &c.
(signed) *B. Waymouth*, Secretary.

P.S.—I transmit copy of circular letter, No. 208, above referred to.

[Circular—No. 208.]

Lloyd's Register of British and Foreign Shipping.

No. 2, White Lion Court, Cornhill, E. C.,
Sir, 6 May 1867.

The committee have recently had under their consideration a suggestion, that, in addition to the maker's name or trade mark, all iron intended for shipbuilding purposes shall be stamped with the tensile strain it will sustain, with a view to securing a good quality of iron for this purpose. From the information they have received from the several outports, where the subject is most likely to be best understood, the committee are led to believe that the course above indicated would not be likely to ensure the object in view; but feeling, as they do, the great importance of the question, they are desirous of impressing on the surveyors the paramount necessity which exists for their giving their utmost attention to satisfying themselves as to the quality of the iron used for shipbuilding in their respective districts, by watching the punchings, shearing, planing, bending, &c. of the plates and frames.

The committee also take this opportunity of calling the surveyor's attention to the workmanship in iron ships, and especially to the necessity of seeing that in all cases the rivets are properly countersunk, and by trying the rivets individually after the completion of the ship.

I am, &c.
(signed) *George B. Seyfang*, Secretary.

— No. 182. —

(M. 7572.)

Sir *W. J. Armstrong* & Co., Newcastle.

Elswick Works, Newcastle-upon-Tyne,
Sir 14 May 1875.

We have the honour to acknowledge the receipt of your circular, dated 29th April, respecting the Clause on "Tests of Iron," proposed by Mr. Reed for introduction into the Merchant Shipping Bill now before Parliament.

We have given some consideration to this subject, and beg to reply to your queries as follows:—

1. We do not think that any advantage is to be gained by testing the materials to be used in the construction of steam machinery, boilers excepted, in the manner proposed.

2. We believe that the introduction of "tests" for ships' plates, &c., would tend in the direction of the saving of life and property in proportion to the extent to which such losses at present arise from defective material.

3. The cost of the materials, and consequently of the ship, would certainly be enhanced by the introduction of the tests.

4. The question of the tests to be applied is one which requires some discussion. We should be disposed to recommend the adoption of tests somewhat different to those contemplated.

5. We have no doubt the clause would be evaded, and we think that its tendency would be to throw orders into the hands of unscrupulous builders, or parties who had little in the way of capital or reputation to lose.

We have, &c.
The Secretary, (signed) *W. J. Armstrong & Co.*
Marine Department, Board of Trade.

— No. 183. —

(M. 7573.)

Messrs. *Bowdler, Chaffer & Co.*, Birkenhead.

Ship Yard, Seacombe, near Birkenhead,
Sir, 14 May 1875.

On the 29th ultimo we received from the Liverpool office of the Board of Trade two copies of printed circulars (one marked M. 4764) respecting "Test of

of Iron," it being proposed to introduce some such test in the new Shipping Bill now before Parliament, and asking what effect such a clause, if carried out, would in our opinion be likely to have on the manufacture, &c., and in reply we have much pleasure in laying before you our opinions on that subject, viz.:

We consider that the proposition for so arbitrary a mode of testing iron for the building of iron vessels and for machinery altogether unreasonable and likely to cripple trade; it would also add materially to the cost of the article, for although we are able to obtain a good make of iron for shipbuilding purposes capable of bearing reasonable tests, and of malleable quality necessary for the work, still if the same iron were required to be guaranteed, the makers would insist upon a higher figure in order to shelter them from any prospective loss, so that a guaranteed test, no matter however small, virtually means an increase of price by the makers of iron, and of course would tend to increase the price of ships and all machinery.

The hinderance to business would be very great, unless there were licensed testing machines by the Board of Trade in the immediate neighbourhood of all the building yards. At Liverpool or Birkenhead there are no licensed machines.

We do not think that the testing of iron would add to security of life and property; both Lloyd's and the Liverpool Underwriters' Registry have, we believe, arrived at a satisfactory scale of strength of materials for the building of iron vessels, based upon the quality obtained from good and well-known makers.

We believe that inefficient workmanship, the want of proper distribution of material, and faulty arrangements, have had more to do with the loss of shipping than from the use of bad material.

It would be difficult to say at present, without any conditions being named, whether a test would insure only a good iron being used; any high test we are quite sure would practically stop the building of iron ships in this country. At the present time there are but few makers that will undertake to supply iron of the test to suit the highest scale required by the Admiralty.

We have both Lloyd's and the Liverpool Underwriters' Registry that undertake the survey and classification of iron vessels, and in the published book of rules belonging to these societies ample provision is made for a suitable quality of material, and these rules if properly attended to, would, we believe, meet all requirements.

We are, &c.

Thomas Gray, Esq. (signed) *Bowdler, Chaffer & Co.*

— No. 184. —

(M. 7574.)

Messrs. *Wm. Gray & Co.*, West Hartlepool.

Dear Sir, West Hartlepool, 14 May 1875.

Absence from home has prevented my reply to your communication of 29th April sooner. In my opinion the clause proposed to be introduced by Mr. E. J. Reed, C.B., M.P., would be found exceedingly unworkable in practice. In purchasing iron for our shipbuilding business, we always stipulate with manufacturers that they shall supply a quality which will pass Lloyd's or Liverpool Underwriters' Surveyors, and when any iron is delivered to us that is not thoroughly up to the mark in quality, which is not quarter per cent. of the whole that comes into our yard, we return it to the makers, or cut it up as scrap iron. We believe that other shipbuilders adopt the same plan in purchasing, and this appears to us to be a sufficient guarantee to a purchaser that his ship shall be built of a suitable quality of iron.

Yours, &c.

The Assistant Secretary, Marine Department, Board of Trade. pro *Wm. Gray & Co.*, *Wm. Kelk.*

— No. 185. —

(M. 7575.)

Messrs. *J. I. Thornycroft & Co.*, Chiswick.

Church Wharf, Chiswick, London, W.,
12 May 1875.

Dear Sir,

We have carefully considered the Clause Mr. Reed proposes to introduce into the Merchant Shipping Bill now before Parliament; and although we think that something ought certainly to be done to ensure that good iron alone is used in the construction of ships and machinery, we fear that end will scarcely be attained by the clause in question.

There is nothing in it to prevent unprincipled shipowners and builders from agreeing to use bad iron in the construction of a ship for the sake of cheapness, and it would give an unprincipled owner a power over an honest shipbuilder, which he certainly ought not to have, by enabling him to refuse acceptance of a ship in which one or two bad plates might have accidentally been used.

We think that as the object of the clause is to protect the public from having to sail in ships made of bad iron, the best plan will be to appoint public inspectors for the general shipbuilding districts, who shall have power to reject all plates which do not come up to the standard of strength and toughness.

The testing of the plates might be conducted in the same way as in the Government dockyards.

The immediate effect of this would be to raise the prices of ships built by inferior builders, but the interest on the extra cost would probably be recouped to the shipowner by his having to pay lower insurance premiums, and by the saving he would effect in repairing bills, and the greater longevity of his ships

If Mr. Reed's clause were introduced it would be necessary to modify it by specifying a time within which an owner could complain, so as to give the builder an opportunity of replacing any bad material by good, or by making him prove that any bad specimens on which he might rely for the repudiation of his contract were fair average specimens of the whole of the material used.

The standards of strength and toughness ought to vary with the class of ships to be built, and the portion of the structure in which it is to be used.

We think it would be a mistake to give one standard of quality for all the iron used in shipbuilding, as it would take away all inducement for makers to improve the quality of iron above that standard.

We are, &c.

To the Assistant Secretary,
Board of Trade.

(signed) *John I. Thornycroft & Co.*

— No. 186. —

(M. 7910.)

Mr. *Cudworth*, Locomotive Department, South Eastern Railway, Ashford.

South Eastern Railway Locomotive Department,
Ashford, Kent, 18 May 1875.

Dear Sir,

I return herewith the papers sent by the Board of Trade respecting a proposed test of the quality of the iron to be used in shipbuilding.

The proposed mode of testing will be a great improvement, in my opinion, the usual vague stipulation of the quality of the iron to be used being very unsatisfactory

I see no reason why the proposed test should not work well in every-day practice, and without fear of evasion. The effect of such a clause in an Act of Parliament will be to set up a standard to which shipbuilders will conform.

Yours, &c.

(signed) *Jas. Cudworth.*

— No. 187. —

(M. 8155.)

The Secretary to the Clyde Ship Builders' and Engineers' Association.

Clyde Ship Builders' and Engineers' Association,
183, West George-street, Glasgow,
28 May 1875.

Sir,

I am instructed to send you the enclosed memorial and representation of this association, in regard to the clause proposed to be introduced by Mr. Reed, M.P., into the Merchant Shipping Bill, now before Parliament. *Enclosure.*

I have, &c.
(signed) *J. W. Ross,*
Secretary.

To the Right Hon. the
President of the Board of Trade.

Enclosure in No. 187.

To the Right Honourable the President of the Board of Trade.

The Memorial and Representation of the Clyde Ship Builders' and Engineers' Association.

Humbly sheweth,

That the memorialists are extensively engaged in ship-building, engineering, and relative trades, and they represent, to a large extent, the principal employers in the Clyde district.

That the attention of the memorialists has been drawn to a clause, in regard to the testing of iron for ship-building purposes, proposed to be introduced by Mr. E. J. Reed, M.P., into the Merchant Shipping Bill, now before Parliament, and to a circular, in reference thereto, addressed to a number of the memorialists by the Assistant Secretary of the Marine Department of your Board.

That the memorialists have given the questions involved in the clause their anxious consideration, and while they would cordially support any measure calculated to afford greater security for life and property at sea, they are satisfied, from their practical experience, that the remedy proposed would not serve that end; and they are of opinion that the clause referred to should be withdrawn, for the following, among other reasons:—

First. It is uncalled for and unnecessary, and not calculated to promote the security of life and property at sea. The causes of shipping disasters are numerous and varied; but the experience of the memorialists does not suggest an instance where a vessel has been lost through the defective quality of the metal employed in her construction.

Second. The classification societies have regulations which are amply sufficient to ensure the quality of the material; and if vessels, as is usually the case, be surveyed regularly in the course of building, inferior iron would be readily detected. Shipowners, can, of course, take means to see that only proper material is used. The proposed test would not ensure the more general use of good iron, and it might (though the memorialists do not think it would to any serious extent) be evaded.

Third. The proposed testing would add greatly to the cost of the production of iron, and of ships and machinery.

(1.) By enhancing the manufacturers' prices for iron. Where a test is employed, or the quality guaranteed, the price is very much increased.

(2.) By causing continual delays in the progress of the work, by which men and machinery would necessarily be kept idle. It would certainly be inconvenient, if not absolutely unworkable, in daily practice.

(3.) By increasing the liability of the manufacturer of the iron, or the constructor of the ship, to have it returned in consequence of a defect, which has only a statutory existence.

Fourth. If iron must be tested by strain or bending, it should be done at the rolling mill or the forges where made, to avoid the expense of carriage of rejected material, and reduce the delay, and responsibility of the users to a minimum. The different brands should have a standard test, and when once passed by the inspector, should ever after be unchallengeable. The inspector should be a Government officer stationed at the works where the iron is made, as is the case in distilleries, &c.

Fifth. The result of the increased cost, combined with the high rate of wages prevailing here, would probably result in driving the important industries of shipbuilding and engineering to a great extent to other countries, where they will be free from exceptional legal restrictions.

For these reasons, in which the memorialists believe a number of the ironmasters in the district concur, and which are not counter-balanced by any appreciable advantage, the memorialists humbly represent that it is not necessary or expedient that the clause referred to should be passed into law.

Signed, on behalf of the Association,

W. Pearce, Chairman.
Glasgow, May 1875. *J. W. Ross*, Secretary.

— No. 188. —

(M. 7567.)

Mr. *D. Kirkaldy* to Board of Trade.

Sir, 99, Southwark-street, London, S.E., 14 May 1875.

In reply to your communication, dated 7th May, in reference to the clause proposed by Mr. E. J. Reed, for insertion in the Merchant Shipping Bill now before Parliament, I beg respectfully to make the following statements:—

1. That I consider the clause as most unsatisfactory in every respect, being extremely vague, the tests proposed not being properly defined could be easily evaded and could not be legally enforced, the very terms employed being misnomers.

2. Thus it is stated, "and a bending strain of degrees," which is absurd; *if* a *bending strain* requires to be inserted at all it ought to be expressed by some weight and not in degrees; further it is stated, "or to withstand instead of such bending strain an extension of per cent."

3. As the greater the extension the better the quality of the iron, "*withstand*" cannot surely be the proper word to employ.

4. Either the bending or the extension should be dispensed with entirely, instead of leaving it optional as it presently stands, and which would be likely to lead to disputes.

5. In stating per centage of extension, it is absolutely necessary to state a standard length on which the extension is taken, or the per-centage is utterly worthless as any criterion of quality, but no length is stated by Mr. Reed in his clause.

6. In all my reports I give the extensions, my standard length being 10 inches.

7. In "Kirkaldy's Experiments on Wrought-Iron and Steel," first edition, published July 1862, I directed attention to the facts elicited, and stated my reasons for greatly preferring the contraction of area at fracture to that of ultimate extension, and the results of a vast number of experiments, since made on a great variety of materials, have confirmed and strengthened those views.

See Enclosure.

8. I annex a tabular statement of my classification of wrought-iron, together with a testing clause, for insertion in specification, which in every instance that I am aware of have been found to work satisfactorily when carried out.

9. In too many cases, however, it appears to have been considered only necessary to *insert* the clause without ever testing to know whether or not the material actually supplied complied with the stated conditions in the specification, which of course I consider most unfair and unjust, not only to myself but to others.

10. In the annexed table I give the ultimate tensile strength per square inch, and the contraction of area at fracture under five classes, viz., class C. D. E. F. G., and under five descriptions, or forms, viz., as bars, round and square; bars flat, angle, and tee; plates, lengthway and crossway.

11. Thus,

11. Thus, whilst round and square bars ought to stand 27 tons and 45 per cent. contraction, to be equal to class 6; flat bars of the same class 26 tons and 40 per cent. contraction; angle and tee bars, 25 tons, 30 per cent. contraction; plates, lengthway, 24 tons, 20 per cent. contraction; crossway, 22 tons, 12 per cent. contraction.

12. Whereas, in Mr. Reed's clause, it is simply stated a "tensile strain of tons to the square inch," without any reference to description or form.

13. The amount of strain, and the per-centage of extension suitable for plates, would not be so for angle and tee bars.

14. Were iron manufacturers, instead of branding their products with Best,—Best Best,—Best Best Best,— Best,—extra Best,—extra Best Best,—Best Best Scrap,—Best charcoal and other devices, were to substitute, say, 25 tons, 30 per cent. contraction, shortened to 25 T.—30 C., the intended quality would be definitely indicated, and it would always be in the power of any one to ascertain by testing that such was the case, and the fractured specimens could be preserved as proof.

15. The Admiralty mode of testing, by bending to various angles, hot and cold, I consider unsatisfactory, as so very much depends upon the mode of treatment, and the skill of the workman, and besides adding very materially to the cost of testing, it is, in reality, quite superfluous.

16. The contraction of area at fracture, indicates the relative softness of the material, and just in proportion to its softness, will be its capability of bending.

17. I have devoted upwards of 18 years, and risked all my available means in erecting very expensive machinery and suitable works, in order to be able to furnish reliable information regarding the mechanical properties of the various materials employed in the constructive arts, and my establishment is the only one of its kind in existence, either in this country or anywhere else.

18. The machines licensed by the Board of Trade, referred to in Mr. Reed's clause, are only adapted for *proving* chain cables and anchors, and are quite unsuitable for *testing* iron under the proposed Merchant Shipping Act.

19. I consider it would be most unjust to insert, as proposed, "any contract notwithstanding," as it would be sure to be seized upon by persons to get rid of a contract when it suited their interests.

20. It would be out of place were I to state, at further length, the means I would suggest for insuring suitable iron being used in ship-building, not having been officially requested to do so.

I have, &c.
(signed) *David Kirkaldy.*

The Assistant Secretary,
Marine Department, Board of Trade.

Enclosure in No. 188.

Kirkaldy's Classification of Wrought Iron for Government,

Founded on the Results of his Experiments on Iron of different well-known Brands, classified according to their ultimate Strength and Softness, for the special use of the Engineers in drawing up Specifications for Wrought-Iron Work for the Public Works Department in *India*.

Description.	Class C.		Class D.		Class E.		Class F.		Class G.	
	Ultimate Stress per Square Inch.	Contraction of Area at Fracture.	Ultimate Stress per Square Inch.	Contraction of Area at Fracture.	Ultimate Stress per Square Inch.	Contraction of Area at Fracture.	Ultimate Stress per Square Inch.	Contraction of Area at Fracture.	Ultimate Stress per Square Inch.	Contraction of Area at Fracture.
	Tons.	*Per cent.*	*Tons.*	*Per cent.*	*Tons.*	*Per cent.*	*Tons.*	*Per cent.*	*Tons.*	*Per cent.*
Bars, round and square	27	45	26	35	25	30	24	25	23	20
Bars, flat	26	40	25	30	24	25	23	20	22	16
Angle and tee	25	30	24	22	23	18	22	15	21	12
Plates, lengthway	24	20	23	15	22	12	21	10	20	8
	} 23	} 16	} 21½	} 12	} 20½	} 9½	} 19½	} 7½	} 18½	} 5
Plates, crossway	22	12	20	9	19	7	18	5	17	3

Testing Clause to be inserted in "Conditions of Contract."

The Iron to be of such Quality as to stand the following Tests under Class .

	Ultimate Tensile Strength per Square Inch.	Contraction of Area at Fracture.
	Average Tons.	*Average per cent.*
Bars, round and square		
Bars, flat		
Angle and tee		
Plates, lengthway		}
Plates, crossway		}

Figures from Table of Qualities to be inserted in the blank spaces.

The superintending engineer, or his deputy, will select materials representing per cent. of the value, from which will be cut pieces 24 inches in length, and of plates and sheets 24 inches by 20 inches. These pieces, after being stamped at or near the ends with the Inspector's stamp, in addition to the maker's brand, to be sent to Mr. David Kirkaldy, Testing and Experimenting Works, 99, Southwark-street, London, S.E., to be tested and reported upon.

The iron will be accepted, although *under* the above specified strain, provided the contraction of area at fracture is proportionately *higher*; or, in other words, *softer* iron than that specified will be accepted.

In order to avoid expense and delay arising from rejection of materials, the attention of contractors is particularly requested to the foregoing tests, which will be strictly enforced in all cases.

— No. 189. —

(M. 6914.)

Messrs. *Richardson, Duck & Co.*, South Stockton.

South Stockton Iron Ship Yard,
Sir, Stockton-on-Tees, 4 May 1875.

In reply to your circular, dated the 29th April, we strongly object to the proposed clause of Mr. Reed, M.P., on the ground that the present plan of testing iron by the London and Liverpool surveyors is sufficient and ample. In addition to this, unless the iron is of fair good quality, it will not stand the work we put it to. We have never heard of a loss from bad iron. To trammel the trade in the way proposed would enhance the cost, and drive the trade into the hands of other nations.

We hope Sir Charles Adderley will resist the proposal, and if he desires it we will get our local Members to support him.

Yours, &c.
(signed) *Richardson, Duck & Co.*

Thos. Gray, Esq., Board of Trade.

— No. 190. —

(M. 8478.)

Messrs. *W. Walker & Co.*, London.

Graving Dock Offices,
1, Railway-place, Fenchurch-street, E.C.,
Sir, London, 3 June 1875.

In reply to your letter of the 29th April, we beg to say in reference to the clause proposed by Mr. E. J. Reed for introduction into the Merchant Shipping Bill, that we think it would be far better to require the manufacturers of all iron intended for shipbuilding purposes to have the same tested at any place licensed by the Board of Trade, and to demand all shipbuilders to use iron only that has been so tested. We think it would greatly increase the expense to require shipbuilders to have the iron tested besides causing them much unnecessary trouble and inconvenience. We should think that the same practice that prevails at the present time as to the testing of anchors and cables, which is invariably done by the manufacturer, would be all that is required to insure good materials in the construction of iron vessels.

At the same time we cannot withhold our opinion that the frequent losses which occur of new vessels are not so much to be attributed to the bad quality of the iron as to defective construction and workmanship, and to improper stowage of cargo and overloading.

We are, &c.
(signed) *W. Walker & Co.*

— No. 191. —

(M. 8586.)

Messrs. *Osbourne, Graham & Co.*, Sunderland.

Sir, Hylton, near Sunderland, 7 June 1875.

In reply to your communication of 29th April, we beg to say, that having carefully considered the effects of such a clause as is proposed by Mr. E. J. Reed for insertion in the Merchant Shipping Bill, we can only arrive at the conclusion that such a clause would have a most injurious effect, as it would tend in no small degree to drive the shipbuilding trade into the hands of foreigners in the first place, and so hamper the British shipowner, that ultimately the carrying

trade, in which this country is so largely interested, would fall into the hands of the foreigners. No respectable shipbuilder or iron manufacturer, in the face o a falling market, could be induced to commence with the making of iron *to order*, or the construction of a vessel for an owner, when from the slightest defect in the quality of the most insignificant piece of iron supplied by the iron maker to be put into the ship by the builder. The builder would be liable to have the ship thrown on his hands, which would necessarily result in most expensive and tedious litigation, in the first place between builder and owner, and again between builder and iron maker. In the event of such a risk being accepted by either party, the price asked for iron and ship would require to be so great as to effectually prevent an owner from purchasing.

The iron as now manipulated is put to a very severe test, and the whole process is watched by people of different interests, viz., Lloyds' surveyors, the builders in every case, and in most cases by an independent surveyor appointed by the owner himself, and we do not consider such a test as proposed by Mr. Reed at all necessary. Its effect would be ruinous to shipbuilders and shipowners, and, by driving trade into the hands of foreigners, have a most injurious effect upon the country at large.

We are, &c.

The Assistant Secretary, (signed) *Osbourne, Graham & Co.*
Marine Department, Board of Trade.

SEAMEN CONVICTS.

RETURN to an Order of the Honourable The House of Commons, dated 16 July 1875;—*for*,

COPY "of LETTER addressed to the Board of Trade by direction of the Town Council of the Borough of *Deal* and the Local Board of *Walmer*, calling Attention to the Burden thrown upon those Localities for the COST of MAINTENANCE in PRISON of SEAMEN convicted under the Two Hundred and Forty-third Section of 'THE MERCHANT SHIPPING ACT, 1854.'"

Board of Trade, 16 July 1875. } T. H. FARRER.

(M. 1956.)

Mr. *G. Mercer* to the Board of Trade.

Sir, Deal, 4 February 1875.

I AM instructed by the Town Council of this Borough, and the Local Board of Walmer, to bring under the notice of the Board of Trade the burden which is thrown upon these localities for the cost of maintenance in prison of seamen convicted for offences under the 243rd section of the Merchant Shipping Act.

The Downs, opposite which Deal and Walmer are situate, is the great highway for shipping bound down Channel from the port of London and the northern ports; before reaching the Downs, and sometimes even after passing the Downs, it occurs that the men strike duty and refuse to proceed further; the captains of the vessels, therefore, for the purpose of prosecuting the men, come into the Downs, and land them either at Deal or Walmer to be dealt with by the magistrates, and when convicted, the expense of their maintenance in gaol is thrown upon the local rates; and I am requested to draw attention to the hardships inflicted on the localities by the Act, and to submit that, for the following reasons, these expenses ought not to be thrown upon the locality, but should, in justice, be defrayed by the public revenue. In the first place, the offences are committed on the high seas, entirely out of the jurisdiction of the local magistrates, and the locality is in no way responsible for such offences, and it is only for the convenience of the shipping interest, and to prevent delay, that the jurisdiction of the local magistrates is invoked under a special clause in the Act. Again, the offences partake more of a public character, analogous in fact to felonies, military offences, revenue offences, or offences under the Criminal Justice and Juvenile Offenders Acts, in all which cases Government does already contribute towards the expenses of maintenance in gaol, and it is upon the same principle that these offences of seamen should be considered. Again, under the same Act, in all cases where pecuniary penalties are inflicted by way of fine, such penalties are paid into the Treasury, so that the public revenue receives the benefit of punishment by pecuniary penalties inflicted under the Act, and should therefore also bear the expense of the punishment by imprisonment under the same Act. Further, it operates injuriously to the proper administration of justice; it gives rise to imputations on the local magistrates, for in cases of acquittal their decisions are suspected to be biassed by the consideration of the expenses to their locality; and when evidence is evenly balanced, and they ought in justice to give the benefit of the doubt to the men, they naturally feel placed in a very delicate position, and that the reason for their decision in favour of the accused is liable to misconstruction, and which in fact has frequently occurred; complaints to the Secretary of State having been made against the magistrates for acquitting men charged before them, and the magistrates are thus placed in a position which they ought not to occupy. In the course of last year no less than 111 men were committed to prison by the magistrates here at an expense of between 300 *l.* and 400 *l.*, and the cases of refractory conduct appear to be

on the increase. The total number of prisoners committed for other offences in Deal and Walmer in the same period was 38, so that the seamen were three times as many as all the other offences combined. I beg also to state that two years ago when a new Shipping Bill was expected to be brought into Parliament, a clause (a copy of which is enclosed) was suggested for insertion to meet the case, but the Bill not having been proceeded with, it was not carried out. Under the circumstances, therefore, I am instructed earnestly to press on the consideration of the Board of Trade the hardship which the localities selected for the trial of these offences suffer from having to bear these expenses, and to submit that the Government should make some provision for relieving the localities from the cost either wholly or in part.

I am, &c.
(signed) *George Mercer,*
Town Clerk of Deal, and Clerk to Local Board, Walmer.

PROPOSED CLAUSE to be added in MERCHANT SHIPPING AMENDED BILL.

THE costs and expenses of the maintenance in gaol of seamen and apprentices convicted and sentenced either summarily or otherwise by any Court in the United Kingdom to imprisonment, or imprisonment with hard labour, for offences under the provisions of this Act, shall be paid by the Commissioners of Her Majesty's Treasury out of the Consolidated Fund of the United Kingdom.

SEAMEN CONVICTS.

COPY of LETTER addressed to the Board of Trade by direction of the Town Council of the Borough of *Deal* and the Local Board of *Walmer*, calling Attention to the Burden thrown upon those Localities for the COST of MAINTENANCE in PRISON of SEAMEN convicted under the 243rd Section of "THE MERCHANT SHIPPING ACT, 1854."

(*Sir Charles Adderley,*)

Ordered, by The House of Commons, *to be Printed,*
16 *July* 1875.

340.

SEAMEN'S SAVINGS BANKS AND MONEY ORDERS.

ACCOUNT of all DEPOSITS Received and Repaid by the Board of Trade, under the Authority of the SEAMEN'S SAVINGS BANK ACT, 1856, during the Year ended 20th November 1874, and of the Interest thereon:

ALSO,

STATEMENT showing the Number and Amount of SEAMEN'S MONEY ORDERS Issued at PORTS in the UNITED KINGDOM and at PORTS ABROAD, and Paid at PORTS in the UNITED KINGDOM, from 1855 to 1874, inclusive.

(PRESENTED PURSUANT TO ACT OF PARLIAMENT.)

Ordered, by The House of Commons, *to be Printed,*
21 *April* 1875.

SEAMEN'S SAVINGS BANKS.

Year ended 20th November 1874.

AN ACCOUNT of all Deposits Received and Repaid by the Board of Trade, under the Authority of the Seamen's Savings Bank Act, 1856, 19 & 20 Vict. c. 41, during the Year ended 20th November 1874, and of the Interest thereon.

Note.—The Account is made up to the 20th of November, that being the date to which Interest for Savings Banks is calculated by the Commissioners for the Reduction of the National Debt.

RECEIPTS.

	£.	s.	d.	£.	s.	d.
To Balance on 20th November 1873						
				78,328	17	10
To Amount received from Depositors during the Year ended 20th November 1874, viz.—						
From Depositors in the Seamen's Savings Bank	41,865	2	6			
From Depositors in the Seamen's Temporary Deposit Bank at the Mercantile Marine Office at Liverpool	8,317	13	–			
				50,182	15	6
To Amount of Interest received from the National Debt Office for the Year ended 20th November 1874				2,568	17	6
			£.	131,080	10	10

PAYMENTS.

	£.	s.	d.	£.	s.	d.
By Amount of Repayments during the Year ended 20th November 1874, viz.—						
To Depositors in the Seamen's Savings Bank	37,466	9	10			
To Depositors in the Seamen's Temporary Deposit Bank at the Mercantile Marine Office at Liverpool	8,498	–	–			
				45,964	9	10
By Balance as under				85,116	1	–

	£.	s.	d.		£.	s.	d.
Invested with Commissioners for the Reduction of the National Debt	84,914	–	8	Due to 2,463 Depositors, including Interest to 20th November 1874, on the Balances in the Seamen's Savings Bank	81,667	12	9
In hands of Her Majesty's Paymaster General	202	–	4	Surplus Interest	3,448	8	3
	£. 85,116	1	–		£. 85,116	1	–

	£.	131,080 10 10

Board of Trade,
April 1875.

R. G. C. Hamilton,
Assistant Secretary.

SEAMEN'S MONEY ORDERS.

Years 1855 to 1874.

STATEMENT showing the Number and Amount of Seamen's Money Orders issued at Ports in the United Kingdom, and at Ports Abroad, and paid at Ports in the United Kingdom, from 1855 to 1874, inclusive.

	ISSUED.		PAID.	
	Number.	Amount.	Number.	Amount.
		£. s. d.		£. s. d.
Ports in the United Kingdom from 1st May 1855 to 31st December 1873, and at Continental Ports from 1st April 1865 to 31st December 1873.	745,063	4,455,725 19 10	743,640	4,450,274 5 10
t Ports in the United Kingdom during the Year ended 31st December 1874.	57,806	329,508 9 8	60,568	372,064 8 10
t the following Ports abroad during the year ended 31st December 1874, viz.—	3,002	41,858 12 5		

PORTS.	No.	Amount. £. s. d.
lexandria	8	41 10 –
moy	1	10 – –
msterdam	115	1,463 10 –
ntwerp	363	4,889 19 –
altimore	8	73 2 –
ordeaux	86	851 19 9
oston	19	345 8 2
oulogne	12	46 4 6
remerhaven	255	4,253 14 6
rest	3	12 5 –
adiz	5	7 11 –
alais	2	3 7 –
allao	16	107 18 4
onstantinople	31	287 10 –
ronstadt	10	29 – –
ieppe	14	43 10 –
unkirk	337	4,776 10 –
unchal	2	6 6 –
enoa	8	123 – –
ourg	402	5,912 12 11
vre	650	9,585 13 –
onfleur	9	45 – –
Carried forward	2,356	32,915 11 2

PORTS.	No.	Amount. £. s. d.
Brought forward	2,356	32,915 11 2
Kertch	5	63 10 4
Leghorn	2	11 – –
Lisbon	3	11 10 –
Malaga	3	8 – –
Marseilles	78	1,107 8 4
Nantes	72	1,200 8 –
New Orleans	129	1,574 3 6
Pernambuco	3	43 13 –
Piræus	1	2 – –
Rio Grande do Sul.	5	57 5 6
Rosario	3	10 – –
Rotterdam	288	4,010 10 8
San Francisco	11	162 – –
Shanghai	16	349 19 3
Stockholm	5	30 – –
Swatow	7	164 12 10
Toulon	1	1 – –
Trieste	2	18 – –
Valparaiso	3	80 3 4
Venice	9	37 16 6
Total	3,002	41,858 12 5

	805,871	4,827,093 1 11	804,208	4,822,338 14 8
	804,208	4,822,338 14 8		
		4,754 7 3	Outstanding 31 Dec. 1874.	

	£. s. d.
In hands of Her Majesty's Paymaster General	3,346 12 3
In hands of Her Majesty's Consuls	2,241 18 8
	5,588 10 11
Deduct Gain on Exchange Account on Remittances by Consuls to United Kingdom	834 3 8
£.	4,754 7 3

Board of Trade,
April 1875.

R. G. C. Hamilton,
Assistant Secretary.

SEAMEN'S SAVINGS BANKS AND MONEY ORDERS.

ACCOUNT of all DEPOSITS Received and Repaid by the Board of Trade, under the Authority of the SEAMEN'S SAVINGS BANK ACT, 1856, during the Year ended 20 November 1874, and of the Interest thereon:

ALSO,

STATEMENT showing the Number and Amount of SEAMEN'S MONEY ORDERS Issued at PORTS in the UNITED KINGDOM and at PORTS ABROAD, and Paid at PORTS in the UNITED KINGDOM, from 1855 to 1874, inclusive.

(Presented pursuant to Act of Parliament.)

Ordered, by The House of Commons, *to be Printed,*
21 *April* 1875.

Under 1 *oz.*

SHIPS SOLD TO FOREIGNERS.

RETURN to an Order of the Honourable The House of Commons, dated 29 July 1875;—*for*,

RETURN "of the Name, Tonnage, and Owner or Owners, at Time of Transfer, of all BRITISH SHIPS that have been Sold to FOREIGN PROPRIETORSHIPS since the 1st day of January 1873."

Board of Trade, 4 August 1875.

T. H. FARRER.

RETURN of the Name, Tonnage, and Owner or Owners, at Time of Transfer, of all BRITISH SHIPS that have been Sold to FOREIGN PROPRIETORSHIPS since the 1st day of January 1873.

NAME OF SHIP.	Tonnage.	NAME OF OWNER OR OWNERS.
A. W. Singleton	561	Thomas Guest. John W. Lovitt. Samuel E. Messenger.
Aaron Brown	1,033	Aaron Brown. David Davies. John Jardine. John Jardine, jun.
Abbot	249	Benjamin T. Robinson. Benjamin Granger. Robert Sample. Richard Robinson.
Abby	138	Alfred Tegner.
Abeasis (S.)	318	Duke Baker.
Abercorn (S.)	695	William Cowan.
Aberdeenshire	249	Matthew Hudson Wascoe.
Acantha	653	Frederick Burgess Smith.
Acorn	187	Matthew Wilkinson.
Activ	180	Tan Kim Teck. Tan Kim Chin.
Ada (S.)	795	William Malcomson.
Ada Batters	541	G. Batters.
Adam Lodge	567	Elizabeth Edwards. Caroline Edwards. John Wm. Nichol. Joseph Viney. Thos. Hodge. George Hannay. Chas. Kaminsky. Wm. Arenbold. Adam Wildgoose. Harry Smith Edwards. Joseph Anderson.
Adelaide Prendergast	302	James Nixon Duck.
Adele	66	Lemuel Cambridge Owen. Donald Stewart.
Adella	365	Thomas Thornton Anthony.
Aden	507	Peninsular and Oriental Steam Navigation Company.
Admiral	12	Robert Lee. John Bye. Harriet Wakefield. Edwd. Philip Charlewood. Thos. Webb. John Turner Hutchins. James Finch. Wm. Berriman. Edward Salmon Clarke.
Adrian	9	Henry Peterson.
Adurnis	290	John Ellman Brown. Wm. Hudson.
Aegeron	260	Bernard Joseph Behrend.
Ærolite	285	J. J. Smith. E. Old.
Africa	415	Edward Guest.
Agamemnon	19	H. G. Harper.
Agra	665	George Lidgett.
Ajax	773	Alexander Cassels.
Albert	16	William Edmund Peters.
Albion	38	Ibramsah.
Alethea	576	John Wilson.
Alexander (S.)	740	Edward Joseph Halsey.
Alexander Blue	135	William Arnold.
Alexander Liddle	165	Catharine Liddle.
Alexandrina	265	John J. Redford.
Alhambra	1,243	Henry Jonas Smith.
Alice	271	Richard Walsh.
Allerton	954	Thomas Schofield.
Allies	288	Joseph Brown.
Alpina	542	David V. Roberts.
Alpine	668	J. E. De Wolf. J. W. De Wolf. David McNutt.
Alps (S.)	1,000	Jas. R. Stewart. Richd. S. Cunliff. Hy. Jas. Watson. Jno. E. Watson. Walter Birrell.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Altona (S.)	1,179	R. C. Byrne. H. Head.
Amble	290	Alban N. Reed.
Amelia	166	John Crawford.
Amy Warwick	272	Robt. Bringhurst Sherrard.
Angelina	7	Michael Victoria.
Anita	27	William Anderson.
Ann	128	Angel Fiory.
Ann	82	Gustav Heinrich Pentermann.
Ann Hall	158	John Wm. Hunter. William Archer Bell.
Ann Rebecca	24	Elisha B. Hassell.
Anna	209	Michael O'Connell.
Annandale	593	William Perlee Livingston. William Pearson. Henry Jas. Livingston. Thomas Watson. William Harrison. William Hepple.
Anne Lee	381	G. Thomson. F. G. Westmorland. H. Westmorland. F. G. Westmorland. P. J. Thomson.
Anne Logan	296	James Whitehead.
Anne Mary	789	Alfred Tegner.
Annie	180	Wm. Winship. Thomas Bell. Mary Hannah Elder.
Annie	92	William Philip De Gruchy. Thomas Renouf. John Clement.
Annie	268	Jas. O. De Wolfe.
Annie	264	John Williams.
Annie Worrall	293	John Doward.
Antagonist	288	Richd. James Cooper.
Antelope	24	George Crawford Rew.
Archipelago	250	Joseph Blumer Bushell. John Blumer Bushell.
Argonaut	630	Loran E. Baker.
Ariadne	316	Robert Cadby Bulgin. Wm. Howell.
Ariel	292	Edward Leetham.
Ariel	145	Richard Walsh.
Arminius	298	Robert Williamson. Alexander Thomson Williamson. William Murray. Peter Murray. Thomas Black Adamson. John Cunningham. Peter Taylor. David Frew. John Murray.
Arosa (S.)	13	The Credit Foncier of England (Limited).
Arthur	154	Edwd. Winship. Christr. Hopper. Thos. Luke. Bolton Davis. Thos. Messer. Lancelot Soulsby. Joseph Robinson.
Arthur Pardew	281	William Jacks.
Art Union	749	George Lidgett.
Asia	842	H. S. Mackenzie.
Atalanta	97	Joseph Whitteron.
Atlantic	166	Henry V. Crandall.
Attie Durkee	307	Bowman Corning. Thomas Killam. Frank Killam. John H. Killam. Samuel Killam. William H. Heartey.
Aurelia	301	Gætano Picasso.
Aurora	98	Daniel Fraser McLaren.
Aylestone	442	Thomas Harrison. Thomas S. Rogerson. John Tunnicliffe.
Azzappardi	255	Guiseppe Abdilla.
B. Davis	282	Benjamin Davis.
Bagee Anak	18	Nhiak Aboo.
Bahiana	569	David Richards. James Mills. John Tyson. John Moore. Samuel Sherwen. William C. Steward. William Burnyeat. Tom Dalzell. Miles E. Burnyeat. Richard Roberts. William Jones. Richard Lloyd. Hannah Bebb. Anne Bebb. Ebnezer Powell. Percy R. B. Fielding. Evan J. Bebb. Robert Jones. John Edwards. John R. Richards. Arthur E. Meredith. Samuel R. Meredith. Joseph Pierce. John G. Hughes. Mordecai Jones. Lewis V. Shirley. Moses W. Jones.
Balear	213	Thos. Donnison.
Ballarat	685	W. Savill. J. W. Temple.
Ballina (S.)	166	Charles William Pollexfen. George Thomas Pollexfen.
Balmoral	214	W. Redman.
Balmoral	582	Robert Edmiston. Alex. Mitchell.
Bamborough	589	William Johnson.
Bantry	17	Joseph Manger.
Barb	44	Frederica Feez.
Baroness	354	Richard Robinson. Moss Jacob Jacob. Daniel Hunkey. Henry Larchin.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Basingstoke	419	Robert Blagden.
Beautiful Star	136	Robt. Dunn.
Bee	224	Wakefield R. Smales. Thos. Jefferson. Chas. Smales. Emily Smales. Chas. Smales.
Beethoven (S.)	905	George Swainston. Robert Scott Briggs. Charles James Briggs. Hiram Craven. William Moore.
Bebar	1,190	Peninsular and Oriental Steam Navigation Company.
Bella Donna	217	James Foster.
Belle	226	Thos. Daniel. Edwd. Morgan. Thos. Daniel, senior. Jas. Hughes.
Belle of the South	387	S. Osborn. H. Osborn. N. Wallis. J. Darby.
Belvedere	483	Benjamin R. Huntley.
Bengali	415	Chong Swee Keat. See Bong Lin.
Benvoirlich	600	Helen Wright. Duncan Wright. James Baird Wright. William Wright. Clement Pain.
Bertha Temple	527	William Stephenson. Frances Collin. William McGibbon.
Billow Crest	169	Andrea Farrugia. Angele Busittil.
Black Prince	463	William Pickard.
Black Watch (S.)	138	Robert Thomson.
Blackwater	777	John Owen.
Blair Athol	425	William M. Weatherspoon. Robert Mills. John Johnson. Samuel Pickup. William D. Pickup.
Blanche	366	John Taylor.
Blencathra	435	William McConnel. Conolly Thomas Hamilton. John Eills. James Doran. Alfred Booth. Philip Henry Holt. William James Lamport. George Holt.
Blooming Dale	28	Benjamin Davis.
Blue Bell	16	John Todd. Edwd. Ord.
Blue Coat Boy	53	J. Askam. T. Honeychurch, jun.
Bonnie Doon (S.)	68	David Hunter. Thomas Steele. Hugh McJannet.
Bonnie Rover	34	William B. Howlett.
Bonny Doon	18	Thomas Cooper. Benjamin H. Cooper.
Branch	75	Henry Trotter Heron.
Brazilian	332	George Josiah Smith.
Brigand	72	Byron Bode.
Brisk	125	James Waldie, jun.
Brisk	28	John Messervy.
Bristow	353	Horace Anderton Clarkson.
Britannia	194	Thos. Harland.
British Empire	491	Thos. W. Sweet.
British Tar	358	F. Cheers.
Broadwood	145	John Cole.
Broomhill	207	Hugh Andrews. George Smith. Brooks Priestly Bilbrough.
Buan Soon Heng	31	Koh Seow Choo.
Buckingham	668	Geo. Dryden Dale.
Cactus	252	William Tote.
Cadovius	288	Tan Kim Tian.
Calypso	529	John Starr De Wolf. James Ratchford De Wolf.
Cambria	270	Benjamin R. Huntley. Ernest Peter Julius Berner.
Campanera	83	Sir Ivor Bertie Guest.
Canada, West	745	John Palmer Bickell.
Canlaon (S.)	112	David Robert. Fenton Crawford.
Capella	264	Robt. Horne Penney. Edward Lucas. John Rickman.
Caroline	385	W. H. Foget.
Caroline	124	Samuel Ralph Gooding.
Caroline	169	John Messervy.
Carradale (S.)	29	Peter Brash.
Catalina	22	Neil McIsaac.
Catch Me	105	Joseph Wiggins.
Caterina B.	112	Lorenzo Said. Carmelo Diacono. Francesco Demarco. Guiseppe Samut.
Catharine	72	Seah Tek Guan.
Cathcart (S.)	304	Matthew J. Wilson.
Catherine	613	Leandre Methot.
Cato	239	Frederick Gordon.
Cavalier	1,096	Thomas Carter. Alfred Carter.
Cearense	432	Robert Singlehurst.
Celeste	598	Jonathan McCully.
Celestial Breeze	487	Douglas Lapraik.
Celia	330	Samuel J. M. Allen. John H. Allen.
Centaur	497	John C. Williams. Samuel Locke, jun. John Locke.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Cervantes (S.)	698	The Liverpool, Brazil, and River Plate Steam Navigation Company (Limited).
Chance	194	George C. Stewart.
Chance	105	Fleming Hewett.
Chanticleer	739	Hadjee Abdoollah Dugman.
Charles Adams	136	Elizabeth Old. John James Smith.
Charles Gumm	353	Abel C. Robbins. Calvin L. Frost. Freeman S. Crosby. Reuben M. Raymond. George W. Bain. Stephen P. Raymond. Rufus P. Trefrey.
Charles XII.	10	Walter Mitchell Donaldson.
Chatham	496	Merchant Shipping Company (Limited).
Chatham	354	Peter Lewis. Humphrey Lewis. John Nicholson.
Chickasaw	1,628	Karsandass Medhavadass.
Chieftain	87	William Dawson.
Chieftain	389	J. Wade. H. H. McMinnies. J. C. Monk. G. Henderson.
Christiana Carnall	193	William Peck.
Christina	230	Robert G. Post.
Christina	262	James Milne. Robert Hadden.
Circassian	167	Thomas Renouf. Philip Mauger, jun.
Circassian (S.)	949	John Lacy. Joseph Rees. Thomas S. Lawrence. John R. H. Keyworth. Henry J. Keyworth.
Cissy	650	J. Temperley. H. W. Carter. C. Beck. J. Hossack. M. A. Spencer.
City of Buenos Ayres (S.)	1,089	Louis Merton.
Claremont (S.)	533	C. Mitchell. H. F. Swan.
Clarentina	5	Richard A. Penn.
Clementina	21	Cornelius Robt. Hinson.
Cleopatra	457	Geo. Clifton Pecket.
Clifton	269	Joseph Horne. Smith Millard.
Clio	196	Robert Steele McMorland.
Clio	131	Wm. Armstrong. Wm. Marden.
Clotilda	553	Stephenson Clarke.
Clymene	746	Joseph Bushby. Isaac Scott. John Bushby. Robt. Edwards.
Coeran	134	Joseph Augustus Shepherd. Hajee Cassum Joosub.
Colima	228	Tan Quee Lan.
Collina	374	James Edwin Pim.
Colombian (S.)	1,193	George Blaxland, jun.
Colonist	437	George F. Smith. William H. Harding.
Comely	97	James Mackean. T. Richmond Clepham.
Commerce	100	Henry Kinch. Wm. Whitehead, sen. Wm. Whitehead, jun. Francis Stafford.
Commercial	63	John Wilson.
Competitor	734	Anthony Forbes Freeman.
Constance	306	Thomas Longrigg.
Constance	421	John Wm. Fenwick.
Contest	166	Robert Blagden.
Copiapo	369	A. F. Moore. S. B. Power. D. George. W. George. W. H. Smith.
Coquet (S.)	775	W. Milburn.
Cordillera	708	Stephen Williamson. Alexander Balfour.
Coringa	884	Anthony F. Freeman.
Cornelia	375	Jas. White Robertson.
Cornelius	193	John Snowdon.
Corolla	113	John Lewis Ingraham.
Coronella	316	James McGregor. Joseph Sothers.
Corra Linn	380	Gustavus Heyn. Thomas Read.
Corregidor	269	Charles Loyd Norman.
Corriera	64	Lorenzo Said. Paolo Galea.
Cortes	1,141	Edward Shotton.
Count D'Aspremont	303	Henry Fredk. Swan.
Courier	386	Hong Kong, Singapore and Borneo Trading Company (Limited).
Creole	428	James Phillips. William Moore.
Criffel	509	Henry Oldknow Huthwaite Robert Leslie Armstrong. Henry Hewell Melmore. William Miller Sewell. Fredk. Robertson Sewell. Joseph Thompson. William Sanderson. Mary Nelson. Jonathan Astee. Mary Clark. Thomas Hastie Hay. John McKay. Elizabeth Smith. Mary Huddlestone. Joseph Price, the elder. John Scott Craig. George Tosh. Andrew Duncan Lows.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Crimean (S.)	1,002	Fredk. Chapple. Jas. Jenkinson Bibby. Jno. Taylor Cross. Jno. Fredk. Mylins. Gustav C. Schwabe. Fredk. R. Leyland. Percival Wormald. Jno. Bibby, jun.
Cruiser	20	Philip Le Gros.
Cuidad Bolivar	55	Alexander Duff.
Curfew (S.)	395	Robert Aitken Mudie.
Czarina	538	Annie M. Kidley.
Danish Beauty	396	Edward Sheldon. William Binney.
Danube (S.)	942	James J. Bibby. John T. Cross. John F. Mylins. Gustav C. Schwabe. Fredk. R. Leyland. Percival Wormald. John Bibby, jun.
Daring	111	James Holden. James Amos. James Holden. William Gilbert.
Dauntless	396	Samuel Hall. Lawrence Delap. Robert Delap. Alfred Troop. Samuel McCormick. William McCormick. Henry D. De Blois. Samuel Groves. John Mills. James Reed. Walter Willett. James Wethers. Le Cain Webb. Joseph Remson. Edwin Purdy. Howard D. Troop. James L. Dunn. Samuel Pickup.
Dauntless	102	Wm. Berrill.
Dawn	17	John White.
Daybreak (S.)	661	E. Elias.
Deacon (S.)	27	William Cumstie Williamson.
De Brus (S.)	178	Joseph Eastwood Barnett.
Deerhound	100	Hugh A. Fraser.
Delta	1,020	Peninsular and Oriental Steam Navigation Company.
Delta	216	Chas. Murdoch.
Deseada	18	Jno. Hassell.
Diamond	26	Alexander Murison.
Diana	178	Josiah Reeves.
Dolly Varden	200	Eliza Sherris.
Dolphin	115	Wm. McCaig.
Dolphin	336	Hermann H. Vander Werff.
Dolphin	109	Jno. Archibald Orr.
Don	117	John Walter Devereux.
Don Mariano	410	Edward Kendall.
Donald McLean	43	Donald McLeod.
Douglas Castle	667	Christian Salveson.
Drepano (S.)	1,069	George Swainston.
Driver	153	Roger Dent. John Dent. George Lawson.
Duke of Edinburgh	69	Madeira and Mamore Railway Company, Limited.
Duke of Wellington	724	Bartholomew French.
Dunbrody	423	Francis Peter Carrel.
E. T. Killman	285	Edward Lindsay.
Eagle	41	John Sangster Mcfarlane.
Eastern Star	95	Syed Junied Bin-Omar Al Junied.
Ebenezer	24	Joseph Thomas Moses. Charles Perchard.
Echo	76	John Dryburgh. Forbes Wyles. Euphemia McCree.
Edgar Cecil	698	Daniel Ward Job.
Edith	92	John Young. Wm. Young, jun.
Eirene	186	Edward Gregson Banner. John Banner. Abraham Maskell Ames.
El Vigilante (S.)	31	Alfred Fernandez Yarrow. Robert Hedley.
Elaine (S.)	432	Fredk. Levick.
Eleanor	653	James Maguire.
Eleanor Dixon	405	The Hong Kong, Singapore and Borneo Trading Company, Limited.
Eleni	341	Antonio Alexander Ralli.
Elgiva	407	William Henry De Wolf. Louis Mors Le Blanch.
Eliza	28	Chas. Francisco.
Eliza	126	John James Smith.
Eliza Alice	582	Patrick Geo. Carvill. E. T Moseley. S. Brookman. J. Wier. W. E. Mason. T. Kaye. R. H. Cogswell.
Elizabeth	445	Thos. W. Sweet.
Elizabeth	11	James Keveley.
Emblem	166	Daniel Owen. Jane Edwards. John Williams.
Emilie and Jessie	409	John William Hunter. Friend Lamb.
Emily	30	P. T. Sinne Lebbe Markar.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Emma	96	Wm. Palgrave Brown.
Emma E. Holbrook	225	Josiah J. Frith.
Emma Muir	376	Jno. W. Lovitt. Thos. Guest. Robt. Guest.
Emmy	80	Bartholomew Hepenstal Hartley.
Emperor (S.)	14	Thomas Comber.
Empire	631	Joseph Elliott. Geo. Davies. Thos. Plain. Jno. Rowlands. Chas. Winn. Thos. Evans. Geo. Davies. Jessie D. Coward. Thos. Wm. H. Plain.
Empress	481	H. G. Harper.
Empress	399	Jno. Webster.
Engineer (S.)	22	Ann Potter. Julia Moody. Matilda Moody.
Enterprise	474	D. W. Clarke.
Enterprise	287	John Thomas Devereux.
Enterprise (S.)	253	R. Blanchard.
Era	518	Anna Northup. Jeremiah Northup. James S. Cochran. Henry G. Clarke. Thomas E. Kenny. George McCulloch. John Trahey. Archibald Nelson. Frank Lawson.
Erie	1,011	Walter Birrell. Hy. Jas. Watson. Thos. Hart Watson. Robt. Curle. John Ebenezer Watson.
Ermina	513	William Rogers. Benjamin Hilton. Robert J. Leonard. George K. Trefry.
Eston Nab (S).	56	James Donald.
Etowah	321	Chas. L. Clare.
Eugenia	39	Guiseppe Moussu. Carmela Moussu.
Eugenie	403	John Henry Allen.
Eugenie	670	P. V. Valin.
Evening Star	270	Thomas Longrigg.
Exchange	371	Gilbert Allen. Frank Killam. John H. Killam. James W. Wyman. Loram E. Baker.
Expert	171	Joseph Gresswell.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Faidthul Illah	888	See Bong Lin.
Fairy (S.)	89	Thomas McGuffie, jun.
Fanny	36	Oug Peng Choon.
Far West	664	E. Sheldon.
Fashion	62	Edward Thomas Phillips.
Faugh Balaugh	278	Patrick F. O'Toole.
Favorite Lass	119	Robert Roe.
Fearless (S.)	27	Frederick Augustus Golla.
Fearless	265	Salvatore Gauci.
Fidela (S.)	715	F. C. Fulton.
Fiona	220	John Palmer Bickell.
First Fruit	90	Clement Le Sueur. Francis George Renouf. Charles George Renouf.
Flirt	94	Benjamin Hocart.
Flora	319	James Tindal.
Flora	351	Herbert F. Baxter.
Florence	137	Thomas Harrison Ridley. Frederick Joseph Wyatt.
Florence	9	Daniel Nathaniel Frith. David Robert Frith.
Florida	351	John Clayton. Alexander Simpson. Thomas Adam. Thomas Adam, jun. Alexander Scott. Francis J. Diggins. James Simpson.
Florida	38	Walter Chappell Rahning.
Flower O'Moray	241	Robert Anderson. William Anderson. William Anderson. William Kinloch. Flora Storm.
Flying Scud (S.)	16	John Thomas Gibson. William Shevill Lishman. Edward Hudson Lishman. Charles Wilson. Hugh Atkinson. John Clarke. William Swanston. Thomas W. Hughes.
Foam	582	John Renison. James Hamilton. Alexander Hamilton. James Muir. John McLetchie. William Teacher, jun. William Renison, jun. Adam Teacher. Hugh Barton.
Foam (S.)	293	J. S. Forbes.
Fo-Ke-Lin	41	George Murray. Frederick Ward. James Bannerman.
Foo Chow Foo	340	Lim Gin Tek. Lim Chong Ean.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Forest King	888	James Kitchin. Joseph Wier.
Formosa (S.)	458	John S. Lapraik. George Armstrong.
Fort Regent	655	Felix Briard. Peter Briard. George Balleine.
Fortunata	101	Giovanni Aquilina.
Forty-nine (S.)	92	Edmund Grove. Henry Cochrane. Thomas Shiel.
Fostedina	403	C. N. Wilson.
France	179	James Staats Forbes, Managing Director of the London, Chatham, and Dover Railway Company.
Frances	163	Lancelot Carr.
Franz	148	Edwin Redlich.
Fred	16	Samuel Kerr.
Fredonia	397	David Arklay.
Freedom	48	James McLauchlin.
Fresh Breeze	569	A. McDougall. J. Stairs. W. McDougall. E. E. B. Nichols.
Frieda	60	Thomas Richard Merry.
Friends	335	John Holmes. James Fields. Joseph Gill.
Fulmar	259	William Dowell.
G. V. Brooke	23	Boulton Molineaux. Thomas Littlejohn.
Galéon	313	John Palmer Bickell.
Game Cock	92	G. H. Gillmore.
Gannet	251	William Christie. Robert Walker. John Mitchell. John Christie. John Walker. Catherine Shepherd. James Fowler Kellus.
Gaviota	150	Herbert St. Leger Magniac.
General Windham	652	Albert Connop.
George	217	Joseph Dotchon.
George	104	Carl Ludwig Richtering.
George Bell	599	Andrew Lovitt. William D. Lovitt. George H. Lovitt. Freeman Gardner.
George Canning	398	F. Woods.
George Douthwaite	363	Thomas Henry Halliday. Ralph Curry. James Duncan.
George Peabody (S.)	29	Ann Main. Alfred Prest. Henry Harty. Ridley Whale. James Frederick Walsh.
Georges Alfred	505	Thomas Thornton Anthony.
Geraldine	23	Murdock McKenzie.
Gibraltar	26	Alexander Sacono.
Gipsey	250	George Sanders Burdis.
Gitana	336	George Claridge Wear.
Glance	33	Philip Messervy.
Gleam	77	Sir David Baird, Bart.
Glendarroch	954	Archibald Gray.
Glengarnock (S.)	111	John Cunninghame.
Glenisla (S.)	459	John Palmer Bickell.
Glory	19	Frederick Mollet.
Gold Fish	291	W. Morris.
Golden Colony	67	Tan Kein Tean.
Golden Horn	1,114	W. Walker.
Gorilla	1,204	The Oriental Ship Owning Association (Limited).
Gosforth	810	James Southern. George Luckley.
Governor	332	Edward Goodchild. John Hart.
Governor	224	W. R. Taylor. Thomas F. Taylor.
Grace Redpath	515	George Duncan.
Granada	705	Samuel Lowther. Robert Curran. James T. Harvey.
Grand Master	76	Joseph S. Belcher.
Granton	445	John Burns.
Grenadier	542	Edward Friend.
Grimaneza (S.)	78	Frederick A. Tamplin.
Growler	66	Kang Geok Chye.
Guayana	87	Alexander Duff.
Guriezo (S.)	36	Robert Wilson.
Haitien (S.)	165	The West India and Pacific Steamship Company, (Limited).
Hannah	155	William Watson. John Watson.
Hannah and Eleanor	170	Henry Scholefield.
Harkaway	616	Saverio Baldacchino.
Harmon	345	Patrick H. Hurley. Michael V. Hurley.
Harp	147	George Johnstone Hayward. Henry Edmund Hayward.
Hattie B.	259	George De Wolf.
Hattie Collett	52	James Squarebridge. Henry Squarebridge.
Hattie Eaton	331	Benjamin Stout Bayley.
Havilah (S.)	166	The Australian Steam Navigation Company.
Hawk	196	R. M. Habgood.
Hector	6	John Angel Gibbs.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Helen	98	Alderman B. Lenney. W. Lenny.
Helen Drummond	512	George Duncan.
Hengist	519	Clarence Primrose. Howard Primrose. William N. Rudolf. John Lerway, jun. George L. Burchell. Alexander J. Patterson.
Henrietta	30	Lemuel C. Owen.
Hera	576	Abdul Hossim Esathoy.
Herald of Light	265	Thomas Hunter.
Hercules (S.)	24	Philip Morel. James V. Thomas. Joseph Milner. Bruce Cox. James Tamplin.
Hermes	132	Henry L. Boulton.
Hero	667	Robert White.
Herriman	88	Peter Barbier.
Hirane	50	George Tuck.
Hirundo	335	John Valentine. Thomas Lupton.
Hochelaga	466	John Palmer Bickell,
Hochung (S.)	850	William Keswick.
Holly	317	John Henry Vaux.
Holywood	257	Thomas William Parkinson.
Hong Kong	43	Seng Toon.
Hong Whang	179	Moona Roona Ravena. Mana Armogum Chitty.
Humber	419	John Smarthwaite.
Huntress	696	Robert Denniston. James McFarlane.
Huron	428	Thomas Plain. George Davies. William Coward. John Thomas. John Rowlands. Mary Sarah Verity.
Ida	389	John Robinson.
Idalia	194	Benjamin Tupman, sen. Benjamin Tupman, jun.
Ignis Fatuus	144	William Whitburn.
Il Peregreno	2	Edward Nicolas Gonzallos.
Imogen	384	The Hong Kong, Singapore, and Borneo Trading Company (Limited).
Inca (S.)	230	The Pacific Steam Navigation Company.
India	717	James Turner.
Isabel	352	Benjamin Fowler. Thomas B. Walker. James S. Darrell. George F. Brown. Albert E. Hick. Pentland Hick. Susanna Fligg. Richard Cross.
Isabella	184	James W. Robertson. Joseph Gibson. Catherine Birnie.
Isabella	140	Alexander Thomson. Andrew Younger Mackay.
Isabella's	133	James Allen. Thomas Young. Thomas Lamb. James Hedley Willis.
Island Light	717	Zebedee Ring. Daniel J. McLaughlin, jun Vincent S. White. Wesley McFee. George E. McLaughlin jun. Frederick M. McLaughlin
Islington	43	Ricardo Rochelt.
Ismael	816	Elias David Ezra.
Ithaca	698	James Horan. Thomas Anderson. Joseph Horan. Robert Kirton Frost. Robert Elwin. John Firth. William Thompson. Robert Hutton Potts.
Ivanhoe	358	Samuel J. Golding. John M. Stockton. Alexander Rankin. Darrel R. Jago. John McAlister. George Ryarson. James Edward White. George John Pearce.
J. W.	343	Lewis John Westaway.
J. A. Pierce	289	John Sample. John Hedley. John Dent, jun. Andrew Watson Hodgson. John Havelock.
J. M. Morales	513	William Grant Crerar.
J. W. Barss	473	John W. Barss. Robert K. Davison. Simon Vaughan. George J. Troop. William J. Lewis. Adam Burns.
J. Steele	568	James Ratchford De Wolf
James	36	Janet Fortay. B. G. Sinclair.
James Lister	950	James Milne.
James Ratchford	148	C. Aubry De Wolf.
James Rogers	249	William Rogers.
Jane	131	William Potter Bovill Joseph Bovill. John Hunter.
Jane	238	Walter Grieve.
Jane Bell	100	Joshua Snow. William J. Bell. Isaac J. Acku.
Jane Tatham	261	Charles Rudd Tatham.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Jane and Dorothy -	350	William Brown. Joseph Brown, jun.
Janet Holt - - -	341	John McDonald. Isabella Rose or McDonald.
Jason - - - -	878	Henry Adamson. Sarah Stuart. Henry Adamson, jun. John Saunders Adamson. George Augustus Toole. Mary Toole or Saunders. Alexander Mitchell.
Jason - - -	375	G. Russell.
Jeannie - - -	17	James Edward Williams.
Jennie and Albert -	291	William Grace.
Jean Sands - - -	632	John William Wood.
Jenny Lind - -	70	Clement M. Melanson. William Meetram.
Jesse (S.) - - -	20	Hugh Christie Paterson.
Jesse - - - -	32	Charles Schweig.
Jewess - - -	476	Thomas Edward Sherwood.
John - - - - -	253	Peter Christie. William Cook.
John - - - -	102	John Morris. George Morris.
John Duncan - -	87	James Mair.
John George - -	460	James Primrose Lindsay. Robert John Lindsay. William Hutchinson. Jane Marin.
John Lawson - -	285	Sanderson Brown.
John Parker - -	1,358	Simon Vaughan. Henry Vaughan. William Vaughan. David Vaughan, jun. Simon Vaughan. Benjamin Vaughan.
John Reay - - -	283	James Reay. John Thompson Baker.
John Smart (S.) - -	21	John Marshall Smart.
John Williamson -	249	David Beatson. Walter Philp. Robert Kilgour. John Williamson.
Johnn - - - -	328	John E. De Wolf. John W. De Wolf.
Jolly - - - - -	25	John George Pascoe.
Josephine - - -	246	Joseph Tabor Willett.
Josephine Oulton -	1,306	A. L. Palmer. D. J. McLaughton, jun.
Kader Bux - -	40	Chinda.
Kader Moheydin Box -	31	Coppay Naynamahamado Lebbe.
Kate - - - -	22	Henry Edmund Newell.
Kathleen - - -	488	John Hemsworth.
Kathleen - - -	597	John Mockler. Patrick Mockler.
Kathleen - - -	98	Archibald Colin Whyte.
Kelvin - - - -	776	Charles Allan Belyer. George Thomas Soley. William M. Simpson. Philip J. Hammond.
Kezia - - - - -	158	George Hindmarch.
Kilmarnock - -	303	John Palmer Bickell.
Kim Chiat Seng - -	53	Allia Merican.
Kim Goh Hin - -	34	Kan Geok Chye.
Kim Soon Guan - -	90	Tan Kee Seng.
Kim Tiang Hen - -	29	Gan Joo Liang.
Kim Yeang Soon -	519	Yeoh Lew.
Kin Lin - - -	164	Joseph Gibson. James Morrison. William Whyte. James Whitton.
Kin Shan - - - -	995	John Robert Kelso.
Kingsland - - -	67	Wilko Hermann Foget.
Kinrara - - - -	637	John Crerar. William Gordon. Roderick McKenzie. Charles H. McKenzie.
Kinshee (S.) - -	685	Francis Bulkely Johnson.
Kooria Mooria - -	1,067	William Lindsay. Dugald MacDougall. Charles Suttie. William Lindsay Lamb.
Krishna - - - -	573	Alfred Fulcher. William Cooper.
La Plata - - -	393	William F. Donaldson. John Donaldson. Patrick Donaldson. John Blair. John Knox Thomson. William Whitesmith. Elizabeth S. Thomson.
Lady Fletcher - -	732	William Henry Baldwin.
Lady Grey - - -	557	Charles Tate. John Mills. James John Donaldson. Christopher Donaldson, jun. Alice Stewart.
Laurentine - - -	692	James Gibb Ross.
Laurita - -	235	Peter Andreas Rickmers.
Leah - - - - -	24	Charles Francisco.
Leander - - - -	450	John Petters.
Leda - - - - -	138	John Wigham. George Dobson. Robert Brown. James Turnbull.
Lee Yuen (S.) - -	735	J. Palmer, jun.
Leonide - - -	696	Gregor Turnbull. James Robert Greig. Thomas Wiseman. James Wiseman.
Lepanto - - -	906	H. Tatham. J. Cundy.
Les Trois Amis - -	66	Marie Alexandre Joseph Augustin Hugues.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Letitia - - -	262	J. W. Swankie. F. W. Tupman.
Liberator - - -	7	Edward Asher Cohan.
Lightning - - -	5	Henry James Murray.
Lilian - - -	728	Lyman Cann. Thomas D. Chipman. Charles E. Brown. Edson Churchill. Loran Cann.
Lilian - - -	242	John Bennett Tolputt.
Lilla - - - -	142	Charles R. Tatham.
Lillie - - - -	327	George W. Bahr.
Lily - - - -	38	William Graham.
Lily of the West (S.) -	11	Thomas McLaren.
Lion (S.) - - -	117	Peter Lindsay Henderson.
Lisboa (S.) - - -	97	Alfred Blyth, the younger.
Little Addy - -	6	John J. Richardson.
Livorno - - -	290	Philip F. Poingdestre. Thomas S. Sutton. Thomas Jenkins. Jenkin L. Thomas.
Lizzie - - -	296	William Brinsmead. Benjamin Tayler. Thomas Hopgood. Thomas Pugsley.
Lizzie Morrow - -	584	James Robinson. Thomas Robinson. Andrew Jackson.
Lizzie Olson - -	205	John Gardiner McCormick.
Lizzie and Ada - -	247	James Thompson.
Lizzie and Kate - -	219	James Fall.
Lone Star - - -	208	Washburne Kenealy. John Kenealy. Henry Kenealy.
Lord Elphinstone (S.) -	440	The Netherlands India Steam Navigation Company (Limited).
Lord Gough - -	200	Edward Corner. John Yeoman. Elizabeth Wood.
Lorne (S.) - - -	74	Duncan Stewart.
Lothair - - -	249	Alfred George Mugford. Andrew Peare. Thomas Ford. Bernard Rudkin Hennessy. George Blaney Meager. James Edwards Burgess. George Shaddick. James Henry Burgess. James Williams.
Lottie Clerke - -	738	A. L. Palmer. D. J. McLaughlin, jun.
Lotus - - -	25	Robert John Vaughan.
Louisa - - -	21	John Le Gros.
Louisa - - -	204	James Tadd.
Louisa - - -	259	Benjamin W. Walker.
Louise - - -	102	John Japp. Joseph Michael Kirby.
Lucida - - -	171	Mariner Wood.
Lucie - - -	287	James Baines.
Lucy - - - -	573	John Burns.
Lurline - - -	20	Edmund Axmann.
Lusitania - - -	198	W. H. Brewer.
Lydia Hilton - -	151	J. Stribley.
Lyeemoon - - -	425	Palanjee Framjee.
M. E. Purney - -	61	John McDonald. Charles Robertson.
Mactan - - -	411	Cornelius Robert Blair Peckford.
Madras (S.) - -	606	Peninsular and Oriental Steam Navigation Company.
Maggie Maud - -	25	Edward J. Lordly.
Magna Charta - -	495	John Edward De Wolf. John William De Wolf.
Magnolia - - -	394	Richard Walsh.
Magog - - -	189	George Donaldson. George Donaldson.
Mahomed Bux - -	22	Peria Espoo.
Malvina - - -	218	Frederick William Fairbrass.
Manchester (S.) -	43	John Owen.
Manfred - - -	587	William Davison. Robert Davison. George Davison. David McKenley. Thomas Richards. Luke Richardson.
Maranham - -	438	Robert Hudson. James William Newton.
Margaret - - -	231	James Potter. William McCulloch.
Maria (S.) - - -	449	Sir Edmund Henry. Knowles Lacon.
Maria Crowell - -	227	Nathaniel W. White. William J. Lewis. George J. Troop. Samuel O. Crowell. William Robertson.
Maria Louisa - -	50	Lewis Peter Brandon.
Marianna (S.) - -	213	Felix Carbray.
Marie - - -	35	Alexander Preyn Vidler.
Marmora - - -	364	Bartholomew French.
Marseilles 8 - -	353	George Fleming.
Martaban - - -	779	Thomas Brocklebank. Ralph Brocklebank.
Martha - - -	123	Thomas White.
Martin Luther - -	388	John Valentine.
Mary - - - -	101	A. M. Duncan. R. M. Duncan.
Mary (S.) - - -	236	Moses di Jacob Abeasis.
Mary Ann - - -	177	Robert Easthope.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Mary Ann - - -	162	John Simpson. George Simpson. William Cowie.
Mary Ann - - -	50	Dominick Deagle.
Mary Anna - -	497	Henry George Harper.
Mary Austin - -	102	Alfred Peace.
Mary Ellen - -	208	William Williams. William Thomas. Thomas Jones. William Williams.
Mary Killam - -	421	John Killam. Nathan W. Blethen. James G. Allen. David Richards. John K. Ryerson.
Mary Mitcheson - -	278	Just Peter Amilo Flindt.
Mary Russell Mitford -	537	Thomas Whittle Sweet.
Mary Tatham - -	638	Thomas Elford.
Massilia - - -	626	Moses Bergel.
Matilda Atheling -	676	T. D. J. Teighe. J. Santry. F. Smith.
Maud - - -	59	John Paley. Edward Pyke. Thomas Mounsey. John Jackson.
Mavis - - -	29	John Palmer.
May (S.) - - -	545	George J. H. Hogg.
May Dundas - -	782	Mark Whitwell. William Harris. Henry Wotton Sanders.
Melbourne - - -	661	William Lindsay. Donald Robert Macgregor. Alexander Dunsmure. William Lindsay. Thomas Lindsay.
Melita - - -	162	J. Hall.
Melita - - -	914	John Palmer Bickell.
Mellona - - -	384	John Yeo.
Melona - - -	193	Fountain Henry George Neale. John McKeeth.
Mermaid - - -	1,076	William Coward. William Cartwright Beddoes. Charles Winn. George Davies. William Sutcliffe Ogden. Thomas William Hart Plain.
Messenger - - -	247	Thomas Hughes.
Micmac - - -	256	S. S. Hall. C. H. Fairweather. Howard D. Troop. Jacob V. Troop.
Midlothian - - -	393	J. Brodie. A. M. Gillespie. J. M. Bryson.
Mikado - - -	805	Thomas Marwood. William Henry Marwood. William Usherwood. Eliza Jane Usherwood. George Bardo.
Milicete - - -	452	Charles Mactaggart. Thomas Brown. Charles McEachren. Lachlan McIsaac. John Lambert Raison.
Minerva - - -	161	Thomas Robson.
Minister Thorbecke (S.)	175	Walter Amos Michael.
Minnie Campbell -	629	Colin Campbell, jun.
Mobile - - -	3	Peter Leckie. James Arthur.
Mohongo - - -	674	John Walker McCarter.
Mokanna - - -	645	John W. Scammell. Joseph H. Scammell. Edward D. Jewett. Jeremiah Harrison. William F. Harrison. A. F. Randolph.
Monarch (S.) - -	46	Edward Dixon. Adam Schoales. George Julius Vertue.
Moneta - - -	621	William C. Harnett. Samuel Thorneby. John Wilson. Leonard Spear. Henry Coppock. James W. Robinson. John A. Foster. Thomas Maddock. George Alker. Thomas Henry Ismay.
Monckton - - -	97	Thomas Maddison.
Mont Cenis - -	931	Thomas Good.
Montreal - - -	461	Arthur F. Paterson. William P. Livingston. Thomas Watson.
Morning Star - -	245	Joseph Featherstone. Joseph Henderson. John Lee.
Morning Star - -	165	Edward Orange.
Morro (S.) - -	68	The Pacific Steam Navigation Company.
Moselle - - -	300	Thomas P. Fawcus. Michael S. Alsop. Robert Hutchinson. Joseph Wood. Henry Fawcus.
Muriel (S.) - - -	559	James Laing.
N. G. W. D'Entremont	53	George J. Locke. Churchill Locke. James McKenzie.
Nalon - - -	48	John Stott Dickie.
Nasree - - -	294	Tariah Fopun.
Natrona - - -	255	William Robertson. William Cain. Stephen Cairn. William D. Robertson. Benjamin Crowley.
Nautilus - - -	248	Charles F. Shotton.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Neptune - - -	330	Edward Wilkie. Archibald Wilkie. William Culley Bergen. Edward Dodds. Thomas Wilkie.
Neptune - - -	329	Robert Nunes. Ralph Nunes.
Neptuno (S.) - -	552	Charles R. Tatham. John Silva. Rachel Ben Sande. Hallings Tatham. Thomas C. Laws.
New Thomas and John	234	Thomas Garese. John Garese.
New York Packet -	650	Jos. Fisher. Thomas Clayton. William Bailie. Robert Harger. Alice Thompson William Gradwell.
Night-Glass - -	216	Periah Ahyah. Ebrahmos.
Nora - - - -	589	Louisa Barclay.
Noranside - - -	601	James Alexander. James W. Wright.
Nora Creina (S.) -	38	Michael Nolan.
Norge - - - -	27	W. Hockley. J. Gill. W. Smith. F. F. White. E. Williams. J. H. Skelton. G. Thomas. W. Watson. T. G. Sandford.
Norman - - -	67	John Macfarlane. James Macfarlane.
Northern (S.) - -	905	C. L. Norman.
Nymphen - - -	175	Elizabeth Darling. Sarah Potts. Thomas Armstrong.
Ocean - - - -	552	Hong Kong, Singapore, and Borneo Trading Company (Limited).
Ocean Queen - -	171	John Hetherington.
Ocean Queen (S.) -	422	John Paterson.
Ocean Steed - -	183	John Mark Wilson.
Oemar Pacha - -	398	Choa Boon Oh.
Olive - - - - -	3	Anthony Tatem.
Omar Pasha - - -	819	Hajee Moosa Bin Ally.
Onward - - - -	606	William Whyte. John Gerrard.
Onward - - -	588	William Perlee Livingston. George Holliday. John McFadyen. Martin Henderson. Henry James Livingston. Thomas Armstrong. William Harrisons. Arthur Frazer Paterson.
Oorun (S.) - - -	163	Hajee Cassum Joosub. Joseph Augustus Shepherd.
Oriole - - -	348	Thomas Worthington Cookson. Edward Hatton Cookson.
Orion - - -	587	William H. Townsend. Francis G. Cook.
Ormelie - - -	532	James Smith.
Orono - - -	543	Robert Lewis. Alexander Fraser. William L. McLellan. Reuben Starratt. Alexander Lewis. George Lewis. Hartan Fulton. James W. Davison. Thomas R. Pearson. Robert C. Fulton. Jotham O'Brien.
Ossian - - -	594	James Gibb Ross.
Ottawa (S.) - -	829	Robert William Hutchison.
Pachino - - -	682	George Swainston.
Palestine - - -	415	John Hall. John Pyburn.
Pallas - - -	268	John William Holmes.
Panama - - -	591	Charles McLennan. Thomas McKenzie.
Pandora - - -	100	Francis Le Sueur.
Pansy - - -	146	John Robert Forster. James Turnbull. Christopher Poole.
Panthea - - -	295	John Augustus de Putron. Goodwin Rooth.
Paouting (S.) - -	641	Charles Loyd Norman.
Parana - - -	750	James Thompson. Joseph Wright Scott. Simon Lewis.
Paris (S.) - - -	920	Donald Robert Macgregor
Parthenon (S.) - -	136	F. D. Lambert, the younger. R. J. Lambert.
Patriot - - -	269	William Dotchon. West Hodgson. Joseph Park. William Henry Park. Emma Eyres Park. Francis Anderson. Thomas Turnbull. Alfred Coulson. Joseph Coulson. Henry Oliver Harris.
Pearl (S.) - - -	8	Robert Redhead. William Gray.
Pedro J. Pidal - -	1,253	William Pile.
Pehlwan - - -	74	Subjally Hunsraz. Ebraham Ramjee.
Pehlwan - - -	464	Boey Ah Ghee.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Pekin	649	W. H. De Wolf. J. A. Powell. James O. De Wolf. Z. Chipman. W. D. Campbell. Samuel J. Shaw. F. C. Mahon.
Penelope (S.)	804	W. Banks.
Percy	324	John Roberts, jun. John Roberts, sen.
Peter Rickmers	732	Peter Andreas Rickmers.
Petrel	18	John Beresford Young.
Petrel	302	J. S. Forbes.
Petter Stahle (S.)	371	Ebenezer Septimus Jobson. Ludwig August Stahle. George Hoosley.
Phœnix	242	William George Clark.
Piscator	63	David Smith. Charles Arenberg. John Myra.
Pleiades	330	T. A. De Wolf.
Plover	295	George Lamb. Anthon Rasmussen.
Pomona (S.)	845	George Robertson.
Porto Rico	470	George Stanton.
Prairie Gem	269	Thomas Walters. Peter Gibbs. Jonas Haines. George Burfitt. Walter William Bartlett. John Angel Gibbs.
Precursor (S.)	532	E. Elias.
Primrose of Ireland	168	Thomas Gann, jun. George Holden. Jane Blackman. Fanny Blackman.
Prince (S.)	179	James Staats Forbes, Managing Director of the London, Chatham, and Dover Railway Company.
Princess Alice (S.)	286	Aberdeen, Newcastle, and Hull Steam Company (Limited).
Princess Louise (S.)	23	Peter Lindsay Henderson.
Princess Royal	991	Edward James. Jos. Fisher. John Spencer. Hayes Hodgson.
Princess Victoria	163	William Ranson Smith. Edward Smith.
Prompt	159	Isidor Selke.
Prophet	104	Carmelo Azzopardi. Salvatore Azzopardi. Guiseppe Cremona. Michele Portelli.
Prospect	234	Frederick Furrell.
Providencea	56	Charles Saunders.
Providential	214	John Angel, Tertius. Robert Davis Mills. James Blackmore.
Prudhoe	576	John Dryden.
Queen	122	William Henry Lean. George Henry Kidger.
Queen Mab (S.)	19	John Payne.
Queen of the Exe	243	Samuel Richard Purle.
Queen of the Sea	58	Lim Hah Poh.
Queen of the Seas	185	Philip Quenault.
Queen of Scots	672	Jacob Lockhart. George L. Jess. Amasa Loomer. Abraham Ells. Ephraim Lockhart. David Lockhart. George W. Churchill.
Quickstep	55	Donald McLeod.
R. T. Turnbull	367	Carl C. L. Winter. Alexander Gilroy, jun.
Rachel	241	John Roebuck Gillespy. Edward Benjamin Scott.
Raffaele (S.)	100	Moses di J. Abeasis.
Rambler	296	James McKennon.
Rankeiler	129	Robert Stewart. John Stewart.
Ravensdowne (S.)	450	R. Blagden.
Reciprocity	647	Robert Paton. James Paton. Alexander Paton. Amelia Kerr. John Kirkwood. Thomas Paton.
Recovery	346	John Holman, jun. John Holman. Henry George Holman. Richard Holman. Alfred Holman.
Regina	198	Nicholas Smith Drew. William Drew. James Peste. Thomas Hamlyn. Edith Lang Matthews. Mary Drew. John Morrish. Daniel Matthews.
Renown	325	Edmund Handcock. Henry Harrison. John Trethowan.
Repeal	94	John Young. John R. Corning. Joseph R. Kinney.
Rescue	26	David Rosser. Richard Rosser.
Research	1,460	Le Baron Vaughan.
Resolve	429	John McMurdo Cannon. John Alexander Black.
Retriever	823	George Clifton Pecket.
Riga	177	James William Porritt. William Dixon. David Porritt.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Ringwood - - -	208	William Esson.
Rio Bento (S.) - -	129	Peter Stuart. Peter Douglas.
Rio Lima (S.) - -	180	R. Blagden.
Rival - - - -	353	Thomas Wymark.
Rob Roy - - -	381	Hans Peter Hansen.
Robert Pulsford - -	552	William Rose. Thomas Aikman. William Rankin.
Robert Ritson - -	660	John H. Allen.
Rocket (S.) - -	4	Francis Albony Conyers.
Rocket - - -	17	Robert Cooper. James Simpson.
Rosalind - - -	547	Robert P. Brownell.
Rosario - - -	530	James G. Ross.
Rose - - - -	142	John Crawford.
Rose Castle - -	149	Thonbron Heron. William Middlemist. William Patterson Lumsden.
Rosetta - - -	291	John Edward De Wolf.
Rothesay - - -	664	Charles G. Turnbull. W. W. Turnbull. S. S. Hall. C. H. Fairweather. Alexander Ballentine. Alexander L. Kerr. T. M. Anderson. Stephen S. Hall.
Royal Saxon - -	799	Alexander Stuart.
S. H. Waterman -	445	Charles Hall.
Sagof - - -	695	Hadjee Mahmood Bin Mahomed Cossim Khoornjee.
St. John - - -	1,021	William Thomson.
St. Lawrence - -	48	Paul Potvin.
St. Paul - - -	351	Ann Bengless.
Salacia - - -	235	George Lawson. John Dent. Roger Dent.
Salsette (S.) - -	1,759	Alexander Adamson. James Wilkie Adamson. Thomas Ronaldson.
Salween - - -	280	Frederick J. White.
Sam Weller (S.) - -	786	George Bell.
Samson - - -	410	Seah Tek Guan.
Samuel - - -	360	Alexander Cassels.
Sant Angelo - -	31	Lorenzo Gatea. Lorenzo Gatea. Giovanna Gatea.
Sant' Anna - - -	55	Guiseppe Caruana.
Sapphire (S.) - -	52	The Southampton, Isle of Wight, and South of England Royal Mail Steam Packet Company (Limited).
Sappho - - -	57	John Snook.
Sardinian - - -	167	James Elsmie. Mary Matthew. George Elsmie. Mary Chalmers. John Galashan.
Sarnia - - -	342	Daniel J. McLauglin, jun. Vincent S. White. George F. Smith.
Savannah - - -	786	Robert Hindhaugh. Manuel Jose Pelegrin. John R. Young. William W. Raxby. William Hunter.
Saxon - - -	990	William Bailey.
Sceptre - - -	181	James Sanders.
Scotia (S.) - - -	98	The Caledonian Steam Towing Company.
Scotsman (S.) - -	226	John Brodrick Dale. James Young. Charles Henry Green.
Scrabster - - -	108	John Watson.
Sea Gem - - -	566	Zachariah Chipman.
Sea Mew - - -	466	Joseph Mauger.
Sea Queen - - -	848	Robert Mills.
Seaman - - -	620	Frederick Curry. William Mounce. John A. Harvie. Bennett Smith. William O'Brien. Jeremiah Northup. Henry G. Clarke. James S. Cochran. William H. Mosher.
Secret - - -	225	Henry Ivimey Cox.
Selina - - -	377	William Williams Pittuck Robert Hudson. William Richardson.
Shaw Allum - -	579	Shaik Mahomed Bin Abdool Lutiff.
Shing-King (S.) - -	711	Charles Loyd Norman.
Sicily - - -	231	William Cay. Charles Doling.
Silver Cloud - -	31	John Rendall.
Silver Fish - - -	4	Lerrier Godfray.
Silver River (S.) -	362	John Dixon Gibbs.
Simoda - - -	410	John Johnson. Robert Mills. William Weatherspoon. Valentine Troop. Elisha B. Goudy.
Simoon - - -	1,162	Nicholas Sinnott. John Murphy. William James Lamport. George Holt. Philip Henry Holt. John Phillips. William Eills.
Sin-Nanzing (S.) -	722	James Whittall.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Sir William Wallace -	180	Jonathan Redshaw. William Brown. Thomas Brown. George Brown. William Redpath.
Sky Lark - - -	126	Alfred Simey.
Smyrna - - -	355	Colin Stewart Caird.
Snake - - -	30	William Jamieson.
Socrates - - -	37	Stirios Hazzopulos.
Solferino - - -	165	Thomas Cowans. Margaret Hunter.
Sorsogon (S.) - -	95	George B. Cadell.
Southern (S.) - -	906	C. L. Norman.
Sparkle - - -	196	John Japp. William Johnston. Charles Alexander Anderson. John Warrack. Walter Berry.
Sparkling Dew - -	336	Henry Hugh Munro.
Spartan - - -	734	Jonas Watson.
Spartan - - -	59	John Herbert.
Spartan - - -	157	John Gillan.
Spectator - - -	296	Mercy Harrison.
Speculator (S.) - -	3	William Hooton. Richard Yates. Edward Charles Hooton.
Speedaway - - -	288	A. Dyer. J. Dyer. F. Tooth. J. Tooth. E. Beves. H. Rugg. T. Rugg.
Speedy - - -	44	Reinard Gregory Jeremiah.
Spirit of the North -	571	George Roland Briggs. George Maule.
Spring Water (S.) -	21	Edward Shotton.
Sree Duyong - -	27	Lee Keng Zong.
Star of the East - -	57	John Dennis Evans.
Statesman - - -	786	Daniel Dixon.
Strathardle - - -	298	G. T. Davie. G. W. Haws.
Stella - - - -	155	Tan Hoon Chuan.
Stella (S.) - - -	70	Sir W. G. M. Call, Bart.
Stork - - - -	233	George Jameson.
Styx (S.) - - -	547	George Dryden Dale.
Sual (S.) - - -	373	John Riach.
Suffolk (S.) - -	695	West India and Panama Telegraph Company (Limited).
Sultan Basha - -	168	Hadjee Jacob Hadjee Jossup.
Sultana - - -	34	George Henry Niochet.
Sun - - - -	156	Henry Heatley. Isabella Gibb.
Sunbeam - - -	810	Colin Stewart Caird. Stuart A. Caird. John McKiver. Robert Reid Paterson.
Sunderland - -	341	Mary Saunders. Stephen Shotton. Jane Shotton.
Sundra - - -	48	Chinta.
Supply - - -	170	Henry Scholefield.
Surprise - - -	438	Alexander Cassels.
Surprise (S.) - -	1,233	P. L. Henderson.
Susan - - -	20	William Henry Curry.
Susan - - -	5	Robert William Dawell.
Susan, M. - - -	597	Robert Mills. John Johnson. William M. Weatherspoon. Albert D. Mills. Israel T. Wade. William B. Troop. Samuel J. Bogart. Major Remson. Valentine Troop. John M. Anderson.
Swan - - - -	27	George Frederick Balleine.
Swiftsure (S.) - -	12	John Thomas Gibson. William Shevill Lishman. Edward Hudson Lishman. Charles Wilson. Hugh Atkinson. John Clarke. William Swanston. Thomas Whitmore Hughes.
Sylph - - -	81	A. E. Scott.
Talbot - - -	823	W. Walker. W. V. Simons.
Tanah Merah (S.) -	556	Joseph McLeod.
Tay - - - -	186	Robert Gething. George W. Jones.
Teesdale - - -	334	George Barnes. William Burnyeat. William Wilson. George W. Brown. Wilfred Wilson. John Falkner. The Harrington and Workington Shipbuilding and Ropemaking Company. Daniel Hayton. James Alexander. John Bushby. Thomas G. Edwards. William Rogerson. George S. Simpson. Ann Scarrow. Mary Twentyman. Henry Twentyman. Jane Sprott. Joseph Mills.
Test - - - -	97	Michael Cauchi.
Theresa - - -	295	Jno. Bell. Septimus Dunn. Lawrence Smith.

Name of Ship.	Tonnage.	Name of Owner or Owners.
Thomas Beaumont	178	William McCay.
Thomas Hampton (S.)	527	G. N. Wilkinson. J. B. Watt. T. S. Webb.
Thomas Walter	172	John H. Taylor.
Thornaby	67	Benjamin George Sinclair.
Tiber	1,114	Charles Wilkie.
Tiger (S.)	117	Peter Lindsay Henderson.
Tigress (S.)	187	Isaac Bartlett.
Tijger-Van-Koetei (S.)	80	David Petrie.
Transatlantic	614	William Henderson. George Thompson, youngest. Cornelius Thompson. Stephen Thompson. Alexander Nicol. James Buyers. George Thompson, junior. William Edward. John Sharp Henderson. Alexander Don.
Trial	11	John Edward Simmonds.
Triumph (S.)	38	John Thomas Gibson. Hugh Atkinson.
		Edward Hudson Lishman. Charles Wilson. William Shevill Lishman. John Clarke. William Swanston. Thomas Whitmore Hughes.
Tropic (S.)	1,377	Thomas H. Jackson.
True Blue	449	John L. Parker.
Trusty	240	Albert Carosus. F. H. R. O. Bock.
Tuck Sing	388	J. W. Scammell.
Turk	91	Quat Liang Swee.
Tyne	173	Charles Lawson.
Union	594	Hannah Scott.
Velocity	249	John Briddon Brown.
Velocity	491	Thomas Todd.
Vendsyssel (S.)	483	John Preston.
Venice	348	J. P. Carr.
Venture	75	James Davidson. Robert Sangster.
Venture	94	Alexander Robertson. George Dawson. George Robertson. James Jack.
Venus	149	John Green Chamberlain. John Pratt.
Vesper	197	William A. Copp. Abner R. McClelan. Thomas McClelan. John G. McClelan. James Newcomb. Jonathan R. Stevens. James Carnwath. John Wilbur. Joseph W. Turner. Samuel J. Calhoun. Edward C. Cole. Barnaby H. Newcomb. Henry A. Stiles. William McGorman. Thomas Matthew, junior. Judah Wells. Simon Bray. Paul R. Moore. Agreen Tingley, junior. Winthrop Akerly. Ezra J. Bishop. Wellington Doucett. Henry A. Turner. James B. Turner.
Vesta	501	John Johnson. William B. Troop. James M. Gilliatt. Major Remson. William M. Weatherspoo Valentine Troop. Robert Mills. Samuel J. Bogart.
Vesta	599	Edwin C. Seely. John D. McClearn. Joseph Parks.
Viceroy (S.)	26	James P. Rennoldson.
Victor	24	William Adam.
Victoria	109	Edward Wilkinson.
Victoria (S.)	10	Archibald Rawlings Gra John Galley. Robert Forster.
Victoria Tatham	307	John Gray Whyte.
Victory	394	William P. Livingston. Stephen Holmes. Thomas Watson. Thomas Armstrong. William Harrison. Arthur F. Paterson, Hy. James Livingston.
Vigilant	58	William Groom. Samuel Robert Groom.
Vigilant (S.)	3	Henry H. Hett.
Vindex (S.)	31	A. Blyth.
Violet	155	William Grange Potter.
Violette	382	James Sheriff. Alexander Wilson. George Morton.
Virginian	308	William B. Milne. Walter Caig.
Vivid	13	W. G. Rattray.
Vixen (S.)	9	Edward Asher Cohan.
Volage	731	Robert Edmiston. Alexander Mitchell.
Vulture	300	Thomas P. Fawcus. Henry Fawcus.

Name of Ship.	Tonnage.	Name of Owner or Owners.
'. D. Bickford - -	130	W. B. Forrest.
'. H. Rendall - -	195	Thomas Collingwood Chown.
'. W. Lord - -	221	Charles Tully.
Vallace (S.) -	1,749	John Hugh Watt.
Vanderer - - -	192	John S. De Wolf.
Varkworth (S.) - -	136	Charles Weatherburn.
Vashburn - - -	194	Thomas Brewster Purvis.
Vasp - - - -	32	J. V. Viale.
Vasp - - - -	32	John Baptiste Viale.
Vave - - - -	184	William Bolam Brayshay. Thomas Huddart. William Towell.
Vavelet - - -	306	Joseph Horne Smith Millard.
Vaverley - - -	722	Thomas Main. Richard B. Reid. Henry Flinn. John Reid. James McAllister. Griffiths J. Griffiths. Alexander Smith.
Welfare - - -	54	Augustus Henry Novelli.
Wellington - - -	240	John James Smith.
Wenona - - -	341	Robert Rees. Edmund Jones. John Thomas Jones. William Thomas.
Westminster (S.) -	629	George Dryden Dale. John William Fenwick. Frank Stanley. Pearson Armstrong.
Westward Ho! - -	650	David James Jenkins.
Whampoa - - -	116	Ryle Holme.
White Star - - -	167	Stephen Heaton Lennard.
Wild Deer - - -	7	Thomas Lindsay Smith.
Wild Hunter - -	336	Thomas R. Bower. James K. Caird.
William Forrest - -	295	Robert Forrest. Isabella Forrest. Martin Forrest. David Forrest.
Willie - - - -	66	Frederick Morrow. Alfred Wallace Owen.
Willing - - -	27	Philip Mollet.
Wolfville - - -	416	Amelia Marr. John Kirkwood. George Brown. John Caldwell Brown. Archibald Cook. Catherine Greive Currie.
Woodcote - - -	474	Thomas Richard Edridge.
Worsley - - -	255	Edward Nicholson.
Wright (S.) - -	228	Margaret Chambers.
Yap Guan - - -	60	Lee Seok Chay.
Yen-tai (S.) - -	598	John Pender.
Yumuri - - -	465	David McClew. William Newton. George Munro Kerr. David Todd. Harrington Robley.
Zambesi - - -	14	William Henry Frith.
Zanga - - -	428	Dashper E. Glynn.
Zillah - - - -	342	Robert George Hughes. John Wynne Paynter. William Cox Paynter.
Ziska - - - -	199	Robert John Ring.
Zohrab - - -	412	E. Z. Holme. T. J. Waters.

6, Adelaide-place, London Bridge, E.C.,
2 August 1875.

Allen Stoneham,
Registrar General of Shipping and Seamen.

SHIPS (SOLD TO FOREIGNERS).

RETURN of the Name, Tonnage, and Owner or Owners at Time of Transfer of all British Ships that have been Sold to Foreign Proprietorships since 1st January 1873.

(*Mr. Sullivan.*)

Ordered, by The House of Commons, *to be Printed,*
6 *August* 1875.

SHIP SURGEONS.

RETURN to an Order of the Honourable The House of Commons, dated 18 March 1875;—*for*,

RETURN "of Names, Ages, and Nationalities of Persons who have served in the British Merchant Service during the last Two Years as Surgeons, whose Names do not appear in the Medical Register."

Board of Trade, Whitehall, 3 June 1875.

T. H. FARRER.

(*Captain Pim.*)

Ordered, by The House of Commons, *to be Printed*, 3 *June* 1875.

RETURN of Names, Ages, and Nationalities of Persons who have served in the BRITISH MERCHANT SERVICE during the last Two Years as SURGEONS, whose Names do not appear in the Medical Register.

NAMES.	Ages.	Nationalities.	NAMES.	Ages.	Nationalities.
Allden, John A.	22	United Kingdom.	Glendinning, Alex.	32	United Kingdom.
Ascher, Edward	35	Germany.	Gardiner, Wm.	27	- ditto.
Allingham, Edward	33	United Kingdom.	Gordon, Skene	19	- ditto.
Anderson, Robert	22	Cape Good Hope.	Gorton, Geo. Wm.	30	- ditto.
Anderson, James	20	United Kingdom.	Goold, Francis	43	- ditto.
Allard, L. T.	—	—	Graham, Andrew	22	- ditto.
Barr, James	22	United Kingdom.	Harkin, Henry	28	Canada.
Bridgeford, Walter	20	- ditto.	Hancock, Alex.	35	United Kingdom.
Beattie, J. or T. W.	20	- ditto.	Huggins, Nelson	28	West Indies.
Burr, Wm. Talbot	32	- ditto.	Holwell, Jno. Ednd. W.	27	United Kingdom.
Bell, Robt. W.	23	Canada.	Henderson, Jno. C.	20	- ditto.
Blanch, Hy. Harcourt	27	United Kingdom.	Husband, Edwd.	35	- ditto.
Blackadder, Alex. Drummond.	29	Canada.	Howitt, Henry	26	Canada.
			Howison, Andrew	24	Australia.
Best, Robert F.	29	United Kingdom.	Heddy, Wm. Jackson	28	United Kingdom.
Burfoot, Geo. Henry	24	- ditto.	Henderson, Gordon	29	- ditto.
Bennett, Wm. Edward	23	- ditto.	Hodgson, Geo. Goodfellow	19	- ditto.
Blair, James	32	- ditto.	Hamilton, James	27	- ditto.
Bleasdell, Charles	27	- ditto.	Hanlam, Wm. D.	22	- ditto.
Baxter, J. B.	—	—	Hanbury, Wm.	38	- ditto.
Barren, M. A.	—	—	Hutchinson, Chas. Frederick	23	- ditto.
Black, Wm.	28	United Kingdom.			
Blyh, John W.	31	Canada.	Jones, Edgar Averay	28	- ditto.
			Johnson, Wm. H.	23	Tasmania.
Calvert, Joseph	23	United Kingdom.	Jones, Wilmot J.	20	United Kingdom.
Curtis, Thomas	32	- ditto.	Jones, Jno. Pitman	37	- ditto.
Corson, Frank F. or Francis F.	25	United States.	Irvine, William	28	- ditto.
			Johnson, Fredk. P.	31	- ditto.
Cattanach, Andrew J.	23	Canada.	Jennings, J. W.	24	- ditto.
Cuffield, Wm. J.	27	United States.	Johnson, W. H.	23	Canada.
Clark, H. B.	41	United Kingdom.	Jackson, Wm. Fred.	22	- ditto.
Croly, Albert	25	- ditto.	Jones, Wm. Dean	32	United Kingdom.
Clarke, Thos. J. or T.	42	- ditto.	Ireland, Wm.	28	- ditto.
Clutterbuck, Jas. Bennett	52	- ditto.	Jennings, Wm.	22	- ditto.
Currie, Dan. Wm.	20	- ditto.	Just, William	—	—
Cadman, J. W.	21	- ditto.			
Collentee, Frank	22	- ditto.	Kelly, Michael Jas.	25	United Kingdom.
Corbit, Wm. B.	33	United States.	Kerr, Jonas	25	- ditto.
Cameron, Nathaniel	21	United Kingdom.	Kitching, Thos.	36	- ditto.
Cornfield, Thomas	36	- ditto.			
Coker, Wm. H.	22	Jamaica.	Laffman, Wm. Collins	25	- ditto.
Callender, Jno. Hawkes	20	United Kingdom.	Law, Wm. Geo. L.	25	Samoa.
Cooke, Robins W.	—	—	Lewin, E. Thomas	34	United Kingdom.
Campbell, Fredk. W.	23	United Kingdom.	Lermusean, E. A. J.	26	Belgium.
Craine, R. E.	32	- ditto.	Luff, Wm. G.	29	United Kingdom.
Driffield, Wm. J.	27	United States.	Milsom, Thomas	29	- ditto.
Donaldson, Wm.	23	United Kingdom.	Marmion, Edwd. J.	22	- ditto.
Diamond, James	34	- ditto.	Mackay, Alex. Lockhart	37	- ditto.
Dixon, H. M.	43	- ditto.	McKenna, Daniel	30	- ditto.
Davies, Morgan	34	- ditto.	Marten, Henry Oake	27	Newfoundland.
			Moore, Hoyle or Hogle	—	—
Edgar, Jas. W.	26	- ditto.	Maunsell, John	23	United Kingdom.
Erskine, Stirling	22	United States.	Munn, Hugh Thos.	34	- ditto.
Elliott, William	26	United Kingdom.	McGregor, P.	19	- ditto.
Eccles, E. V. or J. V.	25	United States.	Macklin, T. T.	20	- ditto.
Eadon, John	30	United Kingdom.	McCullough, Patrick	24	- ditto.
			Mulligan, Edwd. Jos.	23	- ditto.
Foreman, Joseph	22	- ditto.	McDonald, H. C.	23	- ditto.
Francis, John A.	21	- ditto.	McLeod, Patrick B. H.	29	- ditto.
Freeman, R. W.	26	- ditto.	McDonald, James	40	- ditto.
Faber, Charles	26	Germany.	Molsom, Wm. Alex.	21	Canada.
Farnworth, Alfred	19	United Kingdom.	McKay, Angus	24	- ditto.
Fagge, Thomas Hy.	25	- ditto.	Moody, J. M.	22	United Kingdom.
Fraser, Alex. W.	26	- ditto.	Mullen, Douglas	22	- ditto.

Names.	Ages.	Nationalties.	Names.	Ages.	Nationalities.
Matwim, Charles Gabriel	22	United Kingdom.	Stephenson, Isaac	25	United Kingdom.
Martin, Jas. Alex.	37	- ditto.	Stafford, Joseph J.	30	- ditto.
MacLean, Alex.	36	- ditto.	Stewart, James	27	Canada.
Marshall, Nicholas	29	- ditto.	Smith, James A. J.	21	United Kingdom.
McLean, Wm. Hy.	—	—	Scott, Thos. Bodley	24	- ditto.
Murison, J. F.	21	United Kingdom.	Spear, William	26	- ditto.
McBeattie, James	19	- ditto.	Squire, William	22	- ditto.
McLees, Thomas	27	- ditto.	Smith, James Hall, or Wall	27	- ditto.
Milne, Irvine Kempt	22	- ditto.	Swan, Geo. W.	31	Ceylon.
May, Wm. Allan	23	- ditto.	Souter, A. D.	35	United Kingdom.
Morn, Diego Uhjon	30	- ditto.	Smith, Jas. Murray	21	- ditto.
Mills, James	—	—	Stanmore, Fredk.	27	Cape Good Hope.
McDonald, Wm.	23	United Kingdom.	Saunders, H. J.	25	United Kingdom.
McAusland, Andrew	25	- ditto.	Sexton, Wm. Henry	31	- ditto.
McDonald, D. G.	20	- ditto.	Steel, Wilson	28	- ditto.
Miller, Thos. F.	25	- ditto.	Shircore, John Catchick	—	—
Nichols, Jno. Moore	27	- ditto.	Taylor, William	22	United Kingdom.
Nisbet, James	24	- ditto.	Taylor, Francis H. W.	32	Ceylon.
Nordon, Edward	28	- ditto.	Tofield, Jas. H.	26	United Kingdom.
Niewira, Henry	28	Russia.	Thorp, Thomas	33	- ditto.
			Townsend, Jno. W.	26	- ditto.
Owen, Albert Jno.	25	United Kingdom.	Tovey, Reginald S.	28	- ditto.
O'Flynn, Philip	39	- ditto.	Taylor, O. M.	24	- ditto.
O'Brien, James	27	- ditto.			
			Van Hemert, Francis Thomas.	46	- ditto.
Payne, Henry Peter	26	- ditto.			
Pierce, Wm.	30	- ditto.			
Pultney, Geo. B. C.	27	- ditto.	Utting, John	28	- ditto.
Part, J. Vincent	34	- ditto.			
Pearson George	30	- ditto.	Williams, Thos. Price	25	- ditto.
Page, Wm. Henry	24	- ditto.	Wesley, W. K.	27	- ditto.
Pegus, Wm. J.	32	Australia.	Wallace, Arthur Kennedy	28	- ditto.
Pigot, Wm.	35	United Kingdom.	Walkern, Wm. Wymond	23	Canada.
Plummer, Jonah	32	- ditto.	Wood, John Cromyn	43	United Kingdom.
Pearce, Geo. A.	22	- ditto.	Whitington, Charles Edwd.	25	- ditto.
Paterson, Andrew	21	- ditto.	Wilson, Charles J. C.	35	Canada.
Pearson, John C.	22	- ditto.	Williams, Alex.	27	United Kingdom.
			Wigan, George	23	- ditto.
Russell, Logan D. H.	27	United States.	Wheeler, Wm. F. M.	40	- ditto.
Ritchie, Thos. G.	23	United Kingdom.	Wilson, Geo. R.	19	- ditto.
Roach, James Ryan	33	- ditto.	Watson, Eckford Watson	22	- ditto.
Remin, John	26	- ditto.	Willis, W. E. Stoddard	26	- ditto.
Roddick, George	46	- ditto.	Wright, H. Franklin	31	- ditto.
Robillard, E.	48	Canada.	Wilson, Charles W.	34	- ditto.
Roberts, Saml. Arthur	26	United Kingdom.	Waldron, Hubert	30	Australia.
Redpath, David	28	- ditto.	Walker, George	32	United Kingdom.
Raye, John A.	23	- ditto.	Wye, John Henry	31	- ditto.
Ross, James	23	- ditto.	Williamson, Geo. Hy.	29	- ditto.
			Walsh, Michael J.	23	- ditto.
Stocker, Charles Stocker	22	- ditto.	Widdus, Geo. David	30	- ditto.
Stevenson, Edw. J.	25	Switzerland.	Walton, Thos. Smith	34	- ditto.
Sievewright, J. A.	23	Canada.	Wolff, James F.	55	Canada.
Shaw, Geo. B.	42	United Kingdom.	Williams, Jno. Hughes	40	United Kingdom.
Syme, W. H.	25	- ditto.			
Smith, G. A. C. V.	24	- ditto.	Yeates, Donald Fraser	38	- ditto.
Scobell, Henry	26	- ditto.			
Stericker, Wm.	25	- ditto.	Zimmerman, Richard	22	United States.

12 May 1875.

(signed) *Allen Stoneham*,
Registrar General.

SHIP SURGEONS.

RETURN of Names, Ages, and Nationalities of Persons who have served in the British Merchant Service during the last Two Years as Surgeons, whose Names do not appear in the Medical Register.

(*Captain Pim.*)

Ordered, by The House of Commons, *to be Printed,*
3 *June* 1875.

Under 1 *oz.*

RETURN to an Order of the Honourable The House of Commons, dated 16 June 1875;—*for*,

RETURN "of the Names of the SHIPS, with their Owners and Masters; also the Nature of the Voyage on Board of which those Persons under Twenty-one Years of Age have served as SURGEONS who are included in the Return of Two Hundred and Twenty-four Persons whose Names do not appear in the Medical Register (in continuation of Parliamentary Paper, No. 240, of Session 1875)."

Board of Trade, 2 July 1875.

T. H. FARRER.

RETURN of the Names of the SHIPS, with their Owners and Masters; also the Nature of the Voyage on Board of which those Persons under Twenty-one Years of Age have served as SURGEONS who are included in the Return of Two Hundred and Twenty-four Persons whose Names do not appear in the Medical Register.

NAME of SURGEON.	NAME of SHIP.	Official Number.	NAME and ADDRESS of MANAGING OWNER.	NAME of MASTER.	NATURE of VOYAGE.
Anderson, James	Mazinthien	19,534	James Arbuthnot, Invernettic, Peterhead.	Mackie	Peterhead to Greenland.
Bridgeford, Walter	Camperdown	27,496	The Dundee Seal and Whale Fishing Company, East Dock-street, Dundee.	Graville	Dundee to Greenland.
Beattie, J. Walker	Tay	31,624	William Clark, Dundee	Lofley	ditto.
Currie, Dan. William	Intrepid	18,504	George Welch, Dundee	Souter	ditto.
Callender, Jno. Hawkes	Westoe	63,108	Matthew Cay, junior, Dean-street, South Shields.	Ward	Cardiff to Naples.
Farnworth, Alfred *	Scandinavia	29,991	Thomas and John Henderson, 51, Union-street, Glasgow.	Harvey	Glasgow to Gibraltar.
Gordon, Skene	Ravenscraig	30,847	George Douglas Lockhart, Kirkcaldy	Bannerman	Dundee to Greenland.
Henderson, Jno. C.	Victor	19,540	George Welch, Dundee	Edwards	ditto.
Hodgson, Geo. Goodfellow	City of Montreal	65,909	William Inman, Liverpool	Mirehouse	Liverpool to New York.
Jones, Wilmot J.	Carlisle Castle	60,871	Henry Green and Frederick Green, 140, Leadenhall-street.	Cooper	London to Melbourne.
M'Gregor, P.	Active	19,557	George Welch, Dundee	Fairweather	Dundee to Greenland.
Macklin, T. T.	Narwhal	22,686	The Dundee Seal and Whale Fishing Company, East Dock-street, Dundee.	M'Lennan	ditto.
M'Beattie, James	Jan Mayen	27,526	Alexander Robertson, Peterhead	Salmon	Peterhead to Greenland.
M'Donald, D. G.	Ditto	27,526	ditto ditto	ditto	Peterhead to Greenland Seas.
Wilson, George R.	Esquimaux	52,562	The Dundee Seal and Whale Fishing Company, East Dock-street, Dundee.	Yule	Dundee to Greenland.

* By the office copy of the ship's articles this man was engaged as "surgeon," but by the ship's agreement he was employed as purser.

(signed) *Allen Stoneham*, Registrar General.

SHIPS' SURGEONS.

RETURN of the Names of the Ships, with their Owners and Masters; also the Nature of the Voyage on Board of which those Persons under Twenty-one Years of Age have served as Surgeons who are included in the Return of Two Hundred and Twenty-four Persons whose Names do not appear in the Medical Register (in continuation of Parliamentary Paper, No. 240, of Sess. 1875).

(*Captain Pim.*)

Ordered, by The House of Commons, *to be Printed,*
5 *July* 1875.

RETURN to an Order of the Honourable The House of Commons, dated 22 April 1875;—*for*,

RETURN "of all STEAMSHIPS which have CLEARED from PORTS in the UNITED KINGDOM for the BAY OF BENGAL, during the Year ending the 1st of April 1875;—Name, Tonnage, and Horse-power:—

Name.	Tonnage.	Horse Power.	Destination.
			Madras. Calcutta. Akyab. Rangoon.

(*Sir John Hay.*)

Ordered, by The House of Commons, *to be Printed*,
25 *May* 1875.

RETURN of all STEAMSHIPS which have CLEARED from PORTS in the UNITED KINGDOM for the BAY of BENGAL during the Year ended the 1st of April 1875.

Port of Clearance.	Name.	Tonnage.	Horse-Power.	Destination.
London	Good Hope	1,018	150	Madras.
	Craigforth	863	150	
	Paraguay	1,179	180	
	Cheops	984	150	
	Orchis	1,138	200	
	Burmese	1,269	180	
London	Sultan (*a*)	1,890	240	Calcutta.
	Khiva (*b*)	1,506	450	
	Viceroy (*a*)	1,843	240	
	Othello	1,941	300	
	Tanjore	1,289	400	
	Scindia (*b*)	1,423	250	
	Madura	1,266	300	
	Bertha	1,421	250	
	Penguin	1,122	180	
	City of Poonah	1,456	250	
	Australia (*b*)	2,287	600	
	Timor	1,440	200	
	Duke of Buccleuch (*a*)	1,942	500	
	Queen Victoria (*a*)	1,384	200	
	Bangalore	1,178	500	
	Malda	1,268	300	
	Peshawur (*a*)	2,103	600	
	Fenella	813	190	
	Quang Se (*b*)	1,778	400	
	El Dorado (*a*)	2,157	450	
	Khedive (*a*)	2,092	600	
	Kashgar	1,514	450	
	Africa	1,318	250	
	Indus	2,205	500	
	Navarino (*b*)	2,175	450	
	Geelong	1,125	228	
	Duke of Lancaster (*a*)	1,943	500	
	Colombo (*b*)	1,696	250	
	Mongolia	1,584	530	
	Africa	1,811	230	
	Duke of Devonshire (*b*)	1,941	400	
	Zambesi	1,540	310	
	Hindoo	2,505	400	
	Surat (*b*)	1,994	530	
	Japan	1,865	250	
	Bertha	1,421	250	
	Pekin	2,098	600	
	Capella	1,403	225	
	Mirzapore	2,090	600	
	Asia	842	120	
	St. Lawrence	1,425	250	

Port of Clearance.	Name.	Tonnage.	Horse-Power.	Destination.
London	Queen Anne	1,738	350	Calcutta.
	Bokhara	1,775	450	
	Duke of Argyle (*b*)	1,969	400	
	Cathay	1,884	500	
	Rajpootana	1,311	221	
	Sibylla	1,398	225	
	Malwa	1,775	450	
	Duke of Sutherland (*b*)	1,967	400	
	John Tennant	1,450	250	
	Flamingo	1,209	190	
	Chyebassa	1,711	346	
	Thibet	1,671	400	
	Sea Gull	997	150	
London	Elgin	889	150	Rangoon.
	Atholl	1,076	170	
	Lorne	1,034	150	
	Chiswick	796	130	
	South Tyne	985	140	
Liverpool	Pleides (*b*)	1,447	280	Calcutta.
	Chancellor	1,329	200	
	City of Mecca (*b*)	1,461	250	
	City of Poonah	1,456	250	
	Sirius (*b*)	1,411	280	
	City of Carthage	2,000	350	
	Orion (*b*)	1,458	200	
	Historian	1,202	200	
	Statesman	1,209	250	
	City of Canterbury	2,099	440	
Cardiff	Ferntower	700	110	Calcutta.
Newcastle	Nordstjernen	783	Unknown, Danish.	Rangoon.
	Hecla	748	110	
	Renpor	866	120	
	Horseguards	909	160	
	Tertia	663	Unknown, German.	
Glasgow	City of Mecca (*b*)	1,461	250	Calcutta.
	City of Cambridge (*a*)	1,490	200	
	Queen Ann	1,738	350	
	City of Carthage (*b*)	1,717	350	
	City of Manchester (*b*)	2,046	400	
	City of Oxford (*b*)	1,491	200	
	City of Poonah	1,456	250	
	City of Canterbury	2,099	440	
	Tenassèrim	1,172	180	Rangoon.
	Martaban (*a*)	1,646	250	
	Benledi	1,000	160	
	Irrawaddy (*b*)	1,647	250	
	Mandalay (*b*)	1,243	180	
	Amarapoora (*b*)	864	160	
	Penguin	1,123	180	

Note.—Vessels marked (*a*) made three voyages to Calcutta within the period of this Account.
Vessels marked (*b*) made two voyages to Calcutta within the period of this Account.

Custom House, London,
11 May 1875.

J. B. Hale,
Secretary.

STEAMSHIPS (BAY OF BENGAL).

RETURN of all Steamships which have Cleared from Ports in the United Kingdom for the Bay of Bengal during the Year ending 1 April 1875.

(*Sir John Hay.*)

Ordered, by The House of Commons, *to be Printed,*
25 *May* 1875.

Under 1 *oz.*

749

WEATHER INTELLIGENCE.

RETURN to an Order of the Honourable The House of Commons, dated 20 May 1875;—*for*,

RETURNS "showing the LIST of PLACES to which TELEGRAPHIC WEATHER INTELLIGENCE was sent in 1874, arranged according to Coasts:"

"And, showing the Number of TELEGRAMS sent to each STATION, and the STORMS reported on the COASTS of the BRITISH ISLANDS, in 1874 (in continuation of Parliamentary Paper, No. 223, of Session 1874)."

Board of Trade,
20 May 1875.

T. H. FARRER.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed*,
20 *May* 1875.

MEMORANDUM.

THE following pages contain a statement of all the telegrams conveying intelligence of weather issued by the Meteorological Office in the year 1874, and also of all the storms experienced on the coasts of the British Islands during the same period.

The facts on which the account of the storms has been based are,—

I. The continuous records of the direction and velocity of the wind furnished by the self-registering anemographs, on Dr. Robinson's principle, erected by the Meteorological Committee at 10 stations distributed over the United Kingdom, viz.: Kew, Yarmouth, Falmouth, Stonyhurst, Holyhead, Glasgow, Aberdeen, Sandwick Manse (Orkneys), Armagh, and Valencia; as well as at the stations of Alnwick Castle, Seaham Harbour, and Halifax, the results from which are supplied respectively by the kindness of the Duke of Northumberland, the Marquis of Londonderry, and L. J. Crossley, Esq.

II. The observations taken at the telegraphic reporting stations (29 in number) situated in these islands.

III. Reports furnished by certain volunteer observers which have been received at the Meteorological Office.

The office is without accurate information as to the wind on the west coast of Ireland, generally, from Valencia to Lough Foyle, as well as on the west coast of Scotland, from the Mull of Cantyre to Cape Wrath, with the single exception of that received from its telegraphic reporting station at Stornoway.

The only stations at which the signals are hoisted within the above limits are Tralee, Limerick, and Galway, so that it is evident that the districts in question cannot be represented in the Return now submitted.

The scales, according to which the violence of the gales is estimated, are two in number, and are as follows :—

SCALES OF WIND.

FORCE, BEAUFORT SCALE.				Approximate Velocity. Miles per Hour.
0. Calm			0	3
1. Light air	Or, just sufficient to give steerage way.		1	8
2. Light breeze	Or, that in which a well-conditioned man-of-war, with all sail set, and clean full, would go in smooth water from	1 to 2 knots	2	13
3. Gentle breeze		3 to 4 knots	3	18
4. Moderate breeze		5 to 6 knots	4	23
5. Fresh breeze	Or, that to which she could just carry in chase, full and by	Royals, &c.	5	28
6. Strong breeze		Single-reefed topsails and topgallant sails.	6	34
7. Moderate gale		Double-reefed topsails, jib, &c.	7	40
8. Fresh gale		Triple-reefed topsails, &c.	8	48
9. Strong gale		Close-reefed topsails and courses.	9	56
10. Whole gale	Or, that with which she could scarcely bear close-reefed main-topsail and reefed foresail.		10	65
11. Storm	Or, that which would reduce her to storm-staysails.		11	75
12. Hurricane	Or, that which no canvas could withstand.		12	90

The foregoing relation of the velocity of the wind, as measured by a Robinson's anemograph of large size, and its force, according to Sir F. Beaufort's scale, has been drawn up in the Meteorological Office from observations carried on at Holyhead and Yarmouth, and may be considered as approximately correct.

The

The principles of the system of warnings followed in 1874 are fully explained in Parliamentary Paper, No. 10, dated 25th November 1867, in which (Letter 9, from the Meteorological Committee to the Board of Trade) it is said, "The signal would be simply of a warning nature, and, without conveying the impression that the storm would necessarily strike the port where it was hoisted, would imply that extra caution in navigation was requisite." The Committee therefore would consider that extra caution in navigation would be necessary for coasters and fishing boats when the force of the wind reaches No. 8 of Beaufort's Scale, or even No. 7, while no serious danger can be said to exist unless the force reaches 9.

All observations of the wind in which the force exceeded 7 (a moderate gale), or the velocity exceeded 40 miles an hour, have been quoted as instances of the occurrence of a gale, but it has not been considered that the signal was hoisted *late* or was *hauled down too soon* unless the force of 9 (a strong gale) or the velocity of 50 miles an hour was reached *prior* to the issue of the order to hoist, or *subsequent* to the issue of the order to lower.

With reference to the definition of a serious gale, as force 9, which agrees with that adopted by the Board of Trade, a further limitation has been taken. The experience of the office has shown that at exposed stations, such as Holyhead and Sandwick Manse, the force of the wind is exceptionally strong, while it is exceptionally weak at inland stations, such as Kew and Armagh.

It is therefore fair to assume that the occurrence of a velocity of 50 miles an hour at Holyhead or Sandwick respectively does not in itself prove the prevalence of a strong gale on the whole line of coast of St. George's Channel and the Irish Sea, or on the east coast of Scotland, as the case may be.

In the Summary, pp. 26 to 31, all cases in which the signal has been shown to be partially late by one single report of force 9, or of the velocity of 50 miles, have been specially noted in the remarks.

The converse modification of increasing the velocities reported at inland stations, in order to obtain an improved estimate of the force of wind on the coast, has not been carried out, owing to the absence of sufficient information as to the co-efficients which should be used in each case to obtain the true velocity of the wind on the coast.

The service of meteorological telegraphy is subject to a constantly recurring interruption, by the fact of no telegrams being received on Sundays. It should be borne in mind that even if attendance were given at the office on that day, it would not be possible to render generally available to the public the telegraphic intelligence which might be issued. As a rule, the telegraphic offices at the seaports and fishing stations are closed on Sundays at noon, about which time the telegrams from the Meteorological Office would usually reach the coast.

The Summary, p. 31, shows that the total per-centage of success is nearly identical with that for 1872, and far higher than those for 1871 and 1870 (Parl. Papers, No. 504, 1871; No. 152, 1873).

The following are the respective figures:—

	WARNINGS JUSTIFIED			Warnings not justified by subsequent Weather.
	By subsequent Gales.	By subsequent Strong Winds.	Total.	
1870 - - -	46·7	21·7	**68·4**	22·4
1871 - - -	46·	17·7	**63·7**	22·
1872 - - -	61·	19·5	**80·5**	11·9
1873 - - -	45·2	34·	**79·2**	16·8
1874 - - -	45·4	32·8	**78·2**	16·4

It will be seen that the figures for 1874 are almost identical with those for 1873, and that the total per-centage of success, almost 80 per cent., has been

maintained during the past three years. The difference between the results as regards the warnings, justified by subsequent gales in 1872, as compared with 1873 and 1874, is due to the fact that in the preparation of the Return for that year a lower force of wind was taken as indicating a gale, and therefore a complete justification of the warning, than has subsequently been the case.

The office having to issue its warnings on the first signs of the approach of storms has in several cases only to show winds of forces 6 and 7 as justifications of its cautionary telegrams. The warnings, therefore, were perfectly right in principle, though hardly necessary for large sea-going ships, as distinguished from yachts, coasters, and fishing boats.

At the beginning of March the use of the cone, in addition to the drum, as an indication of the direction of the wind in a gale, was resumed.

The Return differs from that of previous years in that the duration of each gale at the observatories is given, *i.e.*, the number of hours during which the velocity exceeded 50 miles; it will be seen from this, that in many cases where the warnings were late, or were not issued at all, the gale which was felt was of little consequence.

It will be noticed that in the cases of one very serious gale, that of 21st October, the storm came on so rapidly during the night time, subsequent to the afternoon reports of the previous day, that no warning could be issued by the office; and it does not seem that the funds at present at the disposal of the office will enable it to anticipate the arrival of such gales as that in question, and a few others which will be seen in the Table, *e.g.*, that of November 28th, in the south of England, as for that purpose much more frequent telegrams from the coast would be required.

The results of the five years' work will, it is hoped, show that while the office cannot be expected to be able to give timely warning of *all* gales, it has yet been able to give such information as would, if attended to, have enabled our coasting seamen to avoid the violence of almost all the serious storms which have visited our coasts.

STORM SIGNALS.

LIST of PLACES to which TELEGRAPHIC WEATHER INTELLIGENCE was sent in 1874, arranged according to COASTS.

COASTS.		PLACES.	COASTS.		PLACES.
IRELAND - -	South - -	New Ross.	ENGLAND - -	West - -	Holyhead.
		Dunmore, East.			Carnarvon.
		Dungarvan.			Port Dinorwic.
		Youghal.			Aberystwith.
		Queenstown.			Milford.
		Cork.			Pembrey.
		Passage.			Llanelly.
		Tralee.			Swansea.
		Limerick.			Briton Ferry.
		Galway.			Porthcawl.
Ditto - -	East - -	Belfast.			Penarth.
		Howth.			Cardiff.
		Kingstown.			Newport.
SCOTLAND - -	East - -	Kirkwall.			Weston-super-Mare.
		Inverness.			Burnham.
		Nairn.	Ditto - -	South (Devon and Cornwall).	Ilfracombe.
		Burghead.			Barnstaple.
		Lossiemouth.			Port Isaac.
		Buckie.			Boscastle.
		Portsoy.			Newquay.
		Banff.			Hayle.
		Fraserburgh.			Pendennis.
		Peterhead.			Scilly.
		Aberdeen.			Penzance.
		Stonehaven.			Falmouth.
		Montrose.			Plymouth (4 Stations).
		Broughty Ferry.			Teignmouth.
		St. Andrews.			Exeter.
		Dundee.			Exmouth.
		Anstruther.	Ditto - -	South - -	Guernsey.
		St. Monance.			St. Helier, Jersey.
		Burntisland.			Gorey, Jersey.
		Alloa.			Weymouth.
		Grangemouth.			Poole.
		Bo'ness.			Cowes.
		Granton.			Ventnor.
		Leith.			Portsmouth.
		Fisherrow.			Littlehampton.
		Dunbar.			Brighton.
		Eyemouth.			Newhaven.
Ditto - -	West (Clyde) -	Glasgow.			Hastings.
		Greenock.			Rye.
		Rothesay.			Dover.
		Campbelton.	Ditto - -	South-east -	Ipswich.
		Girvan.			Harwich.
ENGLAND - -	North West -	Silloth.			Chatham.
		Maryport.			Sheerness.
		Workington.			Faversham.
		Whitehaven.	Ditto - -	East - -	Tynemouth.
		Ramsey.			South Shields.
		Douglas.			Sunderland.
		Castletown.			Middlesborough.
		Barrow.			Redcar.
		Morecambe.			Whitby.
		Fleetwood.			Filey.
		Blackpool.			Withernsea.
		Lytham.			Hull.
		Runcorn.			Goole.
		Southport.			Grimsby.
		Liverpool.			Boston.
		Queensferry.			Sutton Bridge.
		Hawarden.			Lynn.
		Mostyn.			Cromer.
		Bangor.			Yarmouth.
		Port Penrhyn.			Southwold.

RETURN showing the Number of TELEGRAMS sent to each Station, and

DATE OF TELEGRAM.			COASTS TO WHICH SENT.	TELEGRAM.
Descriptive Number.	Day.	Hour.		
1	1 January -	3.15 p.m. -	Ireland, S. and E.; Scotland, E. and W.; England, N.W., W., S., S.E., and E.	Moderate south-westerly gale in Ireland, with a falling barometer and rising sea. Hoist drum - - - - - - - - -
2	2 „ -	12.40 p.m. -	England, S., S.E., and E. - - -	The south-westerly gale has passed to Norway and Denmark. Lower drum - - -
3	3 January -	11 a.m - -	England, S., S.E., and E. - - -	Barometer has fallen very fast over Irish Sea; west gale Scilly. Hoist drum - - -
4	3 „ -	4 p.m. - -	Ireland, S. and E.; Scotland, E. and W.; England, N.W. and W.	Barometer falling again in west; wind backing. Hoist drum again - - - -
5	7 January -	11.5 a.m. - -	Ireland, S. and E.; Scotland, E. and W.; England, N.W. and W., with Exeter, Plymouth, and the Channel Islands.	Barometer falling very fast, Ireland; strong sudden south gale at Cork and Stornoway. Hoist drum - - - - - - -
6	8 „ -	4 p.m. - -	England, S. (east of Channel Islands) S.E. and E.	Barometer falling briskly, Scilly, with slight south gale. Hoist drum - - - -
7	9 „ -	11.15 a.m. -	England, S. (east of Channel Islands) S.E. and E.	Lower drum - - - - - - - -
–	11 January -	- - -	None - - - - - - - -	None - - - - - - - - -
8	13 January -	2 p.m. - -	Ireland, S. and E.; Scotland, E. and W.; England, N.W. and W.	Barometer falling very fast Stornoway; wind backing. Hoist drum - - - -
9	13 „ -	3.30 p.m. -	England, E. (north of Hull) - - -	Barometer falling very fast Scotland; strong south-west winds. Hoist drum - - -
10	14 „ -	Noon - -	Ireland, S. and E. (except Belfast); England, W.	Danger seems over. Lower drum - - -
11	14 „ -	3.40 p.m. -	Ireland, E. (Belfast only); Scotland, E. and W.; England, N.W. and E. (north of Hull).	Lower drum - - - - - - - -

Note.—The asterisk (*) after the name of any station indicates that force 9, or the velocity of 50 miles

the STORMS reported on the COASTS of the BRITISH ISLANDS in 1874.

STORMS experienced on the Coasts of the British Isles in 1874.		MAXIMUM FORCE OBTAINED.				
Descriptive Number.	Storms.	Stations.	Directions.	Velocity. Miles per Hour.	Force. Beaufort Scale.	REMARKS.
1	A fresh south-westerly gale was experienced on most coasts on the night of the 1st or on the 2nd	Sumburgh Head, 2nd	W.S.W.	–	10	
		Sandwick, 1 a.m., 2nd	W.S.W.	47	–	
		Stornoway,* 2nd	S.S.W.	–	11*	
		Aberdeen, 1st	S.S.W.	–	9	
		„ 5 p.m., 1st	S.S.W.	37	–	
		Shields, 1st	S.W.	–	9	
		Alnwick Castle, 4 p.m., 2nd	W.S.W.	47	–	
		Seaham, 10 p.m., 1st	S.S.W.	48	–	
		Glasgow, midnight, 1st	S.W.	43	–	
		Ardrossan, 2nd	W.S.W.	–	8	
		Greencastle, 1st	W.S.W.	–	8	
		Donaghadee, 1st	S.	–	8	
		Holyhead, 10 p.m., 1st	S.S.W.	55	–	Six hours gale.
		Liverpool, 2nd	W.S.W.	–	8	
		Valencia,* 5 p.m., 1st	S.S.W.	53*	–	Six hours gale.
		Pembroke, 1st	W.S.W.	–	9	
		Falmouth, 11 p.m., 1st	S.W. by S.	40	–	
		London, 1st	S.W.	–	8	
2	A westerly gale blew over all the more southerly stations on the night of the 3rd, but was not felt in the north	Holyhead, 5 p.m., 4th	W. by N.	46	–	
		Valencia, 3rd	N.N.W.	–	10	
		Pembroke, 3rd	W.N.W.	–	8	
		Scilly, 3rd	W.N.W.	–	10	
		Falmouth,* 11 a.m., 3rd	W.N.W.	56*	–	One hour only.
		„ 11 a.m., 4th	W.N.W.	44	–	
		Portsmouth, 3rd	W.	–	9	
		Dover, 3rd	S.S.W.	–	8	
		Yarmouth, 6 p.m., 3rd	W. by N.	40	–	
3	A fresh gale from the southward, in the south and south-west, and drawing into west in the north, was experienced on the 7th, or morning of the 8th	Sumburgh Head, 7th	W.	–	8	
		Orkney, 4 p.m., 7th	S.	41	–	
		Stornoway,* 7th	S.	–	10*	
		Nairn, 7th	W.	–	8	
		Greencastle, 7th	S.	–	8	
		Armagh, 11 a.m., 7th	S.	40	–	
		Holyhead, 9 p.m., 7th	S. by E.	55	–	Three hours gale.
		Valencia,* 11 a.m., and noon	S.	51*	–	Three hours gale.
		Roche's Point,* 8 a.m., 7th	S.S.W.	–	9*	
		Pembroke, 7th	S.	–	8	
		Scilly, 8th	S.	–	8	
		Falmouth, 4 p.m., 8th	S. by W.	42	–	
		Plymouth, 8th	S.S.W	–	8	
4	A fresh north-westerly gale was experienced on our northern and north-eastern coasts during the night of the 11th or morning of the 12th.	Sumburgh Head, 12th	N.N.W.	–	8	January 11th was Sunday, and there were no indications on Saturday of the approach of this gale.
		Sandwick,* 11 a.m., 12th	W. by N.	62*	–	15 hours gale.
		Thurso,* 12th	W.N.W.	–	9*	
		Wick, 12th	N.W.	–	8	
		Alnwick Castle, 1 p.m., 11th	S.W. by W.	49	–	
		Shields, 11th	W.N.W.	–	8	
5	The wind increased to a fresh breeze over the more northern parts of our Islands	Sandwick, 5 a.m., 14th	W. by N.	42	–	
		Alnwick Castle,* midnight, 13th.	W. by S.	58*	–	Two hours gale.
		Shields, 14th	W.	–	8	

an hour, was reached *prior* to the hoisting or *subsequent* to the hauling down of the drum.

RETURN showing the Number of Telegrams sent to each Station, an

DATE OF TELEGRAM.			COASTS TO WHICH SENT.	TELEGRAM.
Descriptive Number.	Day.	Hour.		
12	15 January -	3.40 p.m. -	Ireland, S. and E.; Scotland, W.; England, N.W., W., and S.	Barometer falling in west; wind backing t south; sea rising. Hoist drum - -
13	17 „ -	11.10 a.m. -	Same coasts - - - - - -	Lower drum - - - - - -
-	18 „ -	- - -	None - - - - - - - -	None - - - - - - - -
14	19 „ -	11.15 a.m. -	England, W. (south of Milford), S., and S.E.	Barometer falling at Scilly; wind rising; loo out for south-west gale. Hoist drum -
15	20 „ -	11.5 a.m. - -	Ireland, S. and E.; Scotland, E. and W.; England, N.W. and W. (north of Milford).	Barometer falling fast in north-west; south west gale, Cork. Hoist drum - -
16	20 „ -	4 p.m. - -	England, E. - - - - - -	Barometer very low, Scotland; south-wes gale, Holyhead, drawing to west. Hois drum - - - - - - - -
17	21 „ -	11 a.m. - -	Scotland, E.; England, E. - - -	Lower drum - - - - - -
18	22 „ -	11.15 a.m. -	Ireland, E. (Belfast only); Scotland, E. and W.	Barometer falling after sudden rise in north strong south-west wind and high sea Stor noway. Hoist drum - - - -
19	23 „ -	12.15 p.m. -	Scotland, E. - - - - - -	Lower drum - - - - - -
-	26 „ -	- - -	None - - - - - - - -	None - - - - - - - -
20	29 „ -	11.10 a.m. -	Ireland (Belfast and Galway); Scotland, W. and E. (Wick only); England, N.W.	Barometer falling fast in north-west; look ou for west gale. Hoist drum - - -
21	30 „ -	11.10 a.m. -	Same coasts - - - - - -	Lower drum. Gale has only blown in nort Scotland - - - - - -
22	7 February	4 p.m. - -	Ireland, S. and E. (except Cork); Scotland, E. and W.; England, N.W., W. (north of Milford), and E. (north of Hull).	Barometer falling in north; wind likely t blow hard from west to north-west. Hois drum - - - - - - - -
23	9 „ -	11.15 a.m. -	Same coasts - - - - - -	Lower drum - - - - - -

Note.—The asterisk (*) after the name of any station indicates that force 9, or the velocity of 50 mile

the Storms reported on the Coasts of the British Islands in 1874—*continued.*

STORMS experienced on the Coasts of the British Isles in 1874.		MAXIMUM FORCE OBTAINED.				
Descriptive Number.	Storms.	Stations.	Directions.	Velocity. Miles per Hour.	Force. Beaufort Scale.	REMARKS.
6	The wind increased considerably on our west and south coasts, and reached the force of a gale at some stations	Holyhead, 6 and 7 a.m., 16th	S.	50	–	
		Valencia, noon, 15th	S.S.W.	50	–	One hour only.
		Roche's Point, 8 p.m., 15th	S.W.	–	8	
		Falmouth, 8 a.m., 16th	S. by W.	41	–	
		Plymouth, 16th	W.S.W.	–	8	
7	A westerly gale was experienced on all coasts on the 18th, which was particularly severe at the northern stations.	Sumburgh Head, 8 a.m., 19th	W.S.W.	–	8	This gale came on on Sunday afternoon, and no indications were given of it at 2 p.m. on Saturday.
		Sandwick,* 10 a.m., 19th	W. by N.	69*	–	12 hours gale.
		Stornoway,* 18th	W.N.W.	–	10*	
		Thurso,* 18th	W.	–	9*	
		„ 19th	W.N.W.	–	10*	
		Wick,* 18th	W.	–	10*	
		Nairn, 18th	S.W.	–	8	
		Aberdeen,* 7 p.m., 18th	S.W. by W.	52*	–	One hour only.
		Leith,* 18th	W.	–	9*	
		Alnwick Castle,* 4 p.m., 18th	W.S.W.	62*	–	Four hours only.
		Shields,* 18th	W.	–	9*	
		Ardrossan,* 18th	W.N.W.	–	11*	
		Glasgow,* 4 p.m., 18th	S.W. by W.	60*	–	Three hours only.
		Greencastle,* 18th	S.W.	–	10*	
		Donaghadee, 18th	W.S.W.	–	8	
		Armagh, 2 p.m., 18th	W.S.W.	43	–	
		Kingstown,* 18th	W.	–	9*	
		Holyhead, 11 p.m., 18th	S.W. by W.	45	–	
		Liverpool, 18th	W.S.W.	–	8	
		Valencia, 9 a.m., 18th	S.W. by W.	45	–	
		London, 18th	S.S.W.	–	8	
		Yarmouth, 18th	S.S.W.	–	8	
8	A south-westerly gale was experienced on our south coasts on the morning of the 20th, which extended to the northern stations on the 21st	Sumburgh Head, 6 p.m., 21st	W.	–	8	
		Sandwick, 10 a.m., 21st	W. by S.	43	–	
		Stornoway, 21st	S.W.	–	8	
		Alnwick Castle, 11 a.m., 21st	W. by S.	42	–	
		Ardrossan, 5 p.m., 20th	W.	–	8	
		Kingstown, 20th	W.	–	10	
		Holyhead, noon, 20th	S.W. by S.	57	–	
		Liverpool, 20th	W.	–	8	
		Valencia,* 7 a.m., 20th	S.W.	69*	–	Velocity above 50 miles for six hours only.
		Roche's Point,* 8 a.m., 20th	S.W.	–	9*	
		Pembroke, 9 a.m., 20th	W.S.W.	–	9	
		Falmouth, 1 p.m., 19th	W.S.W.	44	–	
		„ 11 a.m., 20th	S.W.	40	–	
		Portsmouth, 19th	S.W.	–	9	
		London, 20th	S.W.	–	8	
–	A fresh westerly gale was felt in the extreme north of Scotland, with strong winds at all the northern stations	Sumburgh Head, 6 p.m., 22nd	W.	–	9	
		Sandwick, 1 p.m., 23rd	W.	41	–	
		Stornoway, 22nd	W.S.W.	–	10	
		Alnwick Castle, 4 p.m., 22nd	W. by S.	50	–	This velocity lasted for only one hour.
9	A fresh local gale was experienced over Scotland, but was strong only on the east coast.	Sumburgh Head,* 8 a.m., 26th	N.	–	9*	
		Sandwick,* 7 a.m., 26th	W.N.W.	61*	–	19 hours gale.
		Thurso, 26th	W.N.W.	–	8	The 25th was Sunday, so that no notice could be obtained of the approach of the gale.
		Wick, 26th	N.W.	–	8	
		Aberdeen, 11 a.m., 26th	W.	45	–	
		Alnwick Castle,* 1 a.m., 26th	W.	56*	–	Two hours gale.
		Glasgow, 11 a.m., 26th	W.	49	–	
		Ardrossan, 26th	W.N.W.	–	8	
10	The wind rose to a moderate gale, but it was again confined to the north of Scotland	Sandwick, 11 a.m., 30th (*a*)	N.W. by W.	48	–	(*a*) The anemometer clock had stopped at 11 a.m. 29th, but the gale was blowing all the night of the 29th.
		Thurso, 26th	W.N.W.	–	8	
		Wick, 29th	N.W.	–	8	
		Alnwick Castle, 8 p.m., 29th	W.S.W.	47	–	
		Moorside, 11 a.m., 29th	W. by N.	41	–	
–	No gale	Sandwick, 5 p.m., 7th	W.N.W.	45	–	Strong winds were reported from the more northern stations.

an hour, was reached *prior* to the hoisting or *subsequent* to the hauling down of the drum.

RETURN showing the Number of Telegrams sent to each Station, and

Descriptive Number.	DATE OF TELEGRAM. Day.	Hour.	COASTS TO WHICH SENT.	TELEGRAM.
24	10 February	11 a.m.	Ireland, S. and E.; Scotland, E. and W.; England, N.W., W.; S. (west of Plymouth), S.E. and E.	Barometer risen very fast east; falling west; south-east gale Valencia. Look out for south-east gale. Hoist drum
25	11 „	11 a.m.	England S. (east of Plymouth) except Dover.	Barometer still falling in west, and southerly gale is extending slowly to the eastward, with a high sea. Hoist drum
26	12 „	11.30 a.m.	England S. (east of Plymouth) except Dover.	Lower drum for the present
27	13 February	11.30 a.m.	Ireland, S. and E.; Scotland, W.; England, N.W. and W.	Barometer falling fast in north-west; look out for southerly gale. Hoist drum
28	16 February	3.40 p.m.	Ireland, S. and E.; Scotland, E. and W.; England, N.W., W. and S. with Faversham.	Barometer falling again, Ireland; wind backing to south-west in west. Hoist drum
29	17 „	11.15 a.m.	Ireland, S. and E.; Scotland, E. and W.; England, N.W. and W.	Lower drum
30	17 „	3.45 a.m.	England, S., with Faversham	Lower drum
31	20 February	11.10 a.m.	Scotland, E. and W.	Barometer falling briskly in north; strong south-west wind Stornoway; high sea; look out for south-west gale. Hoist drum
32	21 „	11.10 a.m.	Same coasts	Lower drum
33	24 February	4.0 p.m.	Ireland, S. and E.; Scotland, E. and W.; England, N.W., W., S. (west of Plymouth) and E. (north of Hull).	Barometer has risen steadily in Norway; gradients steep for southerly winds; look-out for southerly gale. Hoist drum
34	26 „	11.20 a.m.	England S. (east of Plymouth) S.E. and E. (south of Hull).	Heavy southerly gale at entrance of Channel, and on north-east coast of England. Hoist drum
35	26 „	4.0 p.m.	Ireland, S. and E.; Scotland, E. and W.; England, N.W., W., S. (west of Plymouth) and E. (north of Hull).	Barometer very low and west gale Valencia; south-east gale Scarborough. Keep up drum
36	27 „	11.30 a.m.	England, S. (east of Plymouth); S.E. and E. (south of Hull).	Lower drum for the present. Gale over here, but may come on again from eastward 'ere long
37	27 „	4.0 p.m.	Ireland, S. and E.; England, N.W., W., and S. (west of Plymouth).	Lower drum. Barometer rising in west, and falling in Norway
38	28 „	11.10 a.m.	Scotland, E.	Lower drum
39	28 February	11.10 a.m.	Ireland, S. and E.; England, N.W., W., and S. (west of Plymouth).	Barometer has ceased rising Valencia; wind has backed to south-west; blowing fresh. Hoist drum
40	28 „	3.45 p.m.	Scotland, E. and W.; England, S.; (east of Plymouth) and E. (north of Hull).	Barometer falling fast, Valencia; another southerly gale and high sea. Hoist drum again
41	2 March	11.30 a.m.	Scotland, E. and W.; England, S. (east of Plymouth) and E. (north of Hull).	Lower drum

Note.—The asterisk (*) after the name of any station indicates that force 9, or the velocity of 50 miles

the Storms reported on the Coasts of the British Islands in 1874—*continued*.

STORMS experienced on the Coasts of the British Isles in 1874.		MAXIMUM FORCE OBTAINED.				REMARKS.
Descriptive Number.	Storms.	Stations.	Direction.	Velocity. Miles per Hour.	Force. Beaufort Scale.	
11	A south-east gale, which extended to the more easterly stations, was felt in the west and south-west on the night of the 10th	Greencastle, 11th	S.S.E.	–	10	
		Donaghadee, 10th	S.S.E.	–	8	
		Kingstown, 10th	S.E.	–	10	
		Valencia,* 5 and 6 p.m., 10th.	S.E.	64*	–	32 hours gale.
		Roche's Point, 10th	S.	–	10	
		Pembroke, 10th	S.E.	–	10	
		Scilly, 3 a.m., 11th	E.S.E.	–	10	
		Falmouth, 2 a.m., 11th	S.E. by S.	58	–	
		Plymouth, 10th	S.E.	–	8	27 hours gale.
		Yarmouth, 3 a.m, 10th	E. by N.	45	–	
12	A southerly gale was felt at some of the Western stations.	Stornoway, 14th	S.S.W.	–	10	
		Donaghadee, 13th	S.	–	8	
		Holyhead, 5 a.m., 14th	S. by E.	54	–	One hour only.
		Valencia, midnight, 13th	S.S.W.	57	–	Four hours gale.
		Portishead, 14th	W.S.W.	–	8	
–	A slight westerly gale was felt at the south-west stations.	Valencia, night of 16th	W.	–	8	
		Scilly, night of 16th	N.W.	–	8	
–	No gale; a general fall of the barometer, but nothing beyond a strong breeze was felt.	- - - - - - - - -	- -	–	–	Aberdeen, a strong wind from south (7).
13	An extremely heavy southerly gale swept over these Islands; it commenced at the western stations on the evening of the 24th, and was very severe in the north of Scotland	Sumburgh Head, 8 a.m., 26th	S.E.	–	9	
		Sandwick, 3 p.m., 26th	S.E.	77	–	53 hours gale.
		Stornoway, 26th	S.E.	–	9	
		Thurso, 26th	S.E.	–	11	36 hours gale reported.
		Wick, 26th	S.E.	–	11	
		Nairn, 2 a.m., 26th	S.	–	10	
		Aberdeen, 11 a.m., 26th	S.E.	69	–	20 hours gale.
		Alnwick Castle, 9 a.m., 26th	S.E. by S.	51	–	15 hours gale.
		Seaham, 10 a.m., 26th	S.E.	42	–	
		Shields, 26th	S.S.E.	–	9	20 hours gale.
		Scarborough, 26th	S.S.E.	–	10	
		Glasgow, 9 a.m., 26th	S.E. by E.	49	–	
		Ardrossan, 26th	E.S.E.	–	9	
		Greencastle, 25th	S.E.	–	10	24 hours gale.
		Donaghadee, 26th	S.S.E.	–	9	
		Armagh, 4 a.m., 26th	S.E.	46	–	
		Kingstown, 25th	S.S.E.	–	9	
		Holyhead, 8 a.m., 26th	S.S.E.	65	–	Eight hours gale.
		Stonyhurst, noon, 26th	S.E. by S.	46	–	
		Valencia, 2 p.m., 26th	S.S.W.	65	–	Gale continued with lulls during the whole of 25th and 26th.
		Roche's Point, 25th	S.	–	10	
		Pembroke, 25th	S.	–	10	
		Portishead, 26th	S.	–	9	
		Scilly, 25th	S.S.E.	–	8	
		Falmouth, 3 a.m., 26th	S. by E.	55	–	Three hours gale.
		Plymouth, 26th	S.	–	10	
		London, 27th	S.	–	8	
		Yarmouth, 3 a.m., 27th	S.E. by S.	48	–	
14	A southerly gale commenced on the morning of the 28th at Valencia, and extended eastward during the next two days	Sandwick, 10 a.m., 2nd	S.S.E.	45	–	
		Greencastle, 28th	N.N.E.	–	8	
		Holyhead, 9 p.m., 28th	S.S.E.	48	–	
		Valencia,* 11 a.m., 28th	S.S.E.	53*	–	Three hours gale.
		Roche's Point, 1st March	S.S.W.	–	9	
		Pembroke, 28th	S.S.E.	–	8	
		Scilly, 28th	S.	–	9	

an hour, was reached *prior* to the hoisting or *subsequent* to the hauling down of the drum.

RETURN showing the Number of Telegrams sent to each Station, and

DATE OF TELEGRAM.			COASTS TO WHICH SENT.	TELEGRAM.
Descriptive Number.	Day.	Hour.		
–	16 March	–	None	None
42	19 March	11.15 a.m.	Ireland, S. and E.; Scotland, W.; England, N.W. and W.	Barometer falling very fast in Scotland; sea high; look out for westerly gale. Hoist south cone
43	19 „	12.30 p.m.	Scotland, E. (south of Leith); England, S., S.E., and E.	Barometer falling extremely fast Scotland; west gale Ardrossan. Hoist south cone
44	19 „	1.30 p.m.	Scotland, E. (north of Leith)	Barometer falling very fast; south gale Aberdeen; west gale Ardrossan. Hoist south cone for westerly gale
45	20 „	11.20 a.m.	Ireland, S. and E.; England, N.W., W., and S.	Lower cone
46	20 March	3.30 p.m.	Ireland, S. and E.; England, N.W., W., and S. (west of Plymouth).	Barometer falling Valencia; wind has backed to south from north. Hoist south cone
47	21 „	11.45 a.m.	Same coasts	Lower cone
48	25 March	3.30 p.m.	Ireland, S. and E.; Scotland, W.; England, N.W. and W.	Barometer falling Valencia; strong south breeze; sea rising. Hoist south cone.
–	27 March	–	None	None
49	28 March	11.15 a.m.	Ireland, S. and E.; Scotland, E. and W.; England, N.W., W., and S. (west of Plymouth).	Barometer falling fast Valencia; south-west gale Greencastle; high sea Valencia. Hoist south cone.
50	28 „	3.50 p.m.	England, E. (north of Hull)	Strong south-west winds on west coast, likely to increase. Hoist south cone

Note.—The asterisk (*) after the name of any station indicates that force 9, or the velocity of 50 miles

the Storms reported on the Coasts of the British Islands in 1874—*continued.*

STORMS experienced on the Coast of the British Isles in 1874.		MAXIMUM FORCE OBTAINED.				REMARKS.
Descriptive Number.	Storms.	Stations.	Direction.	Velocity. Miles per Hour.	Force. Beaufort Scale.	
–	A local gale in the south of Scotland.	Alnwick Castle,* 8 p.m., 16th	W. by S.	60*	–	Four hours gale.
		Glasgow, 9 a.m., 17th	W. by S.	48	–	
		Ardrossan, 16th	W.S.W.	–	8	
15	A fresh gale was experienced on all our west and northern coasts, from west generally, but from north-west in the north	Sandwick,* 10 a.m., 18th	N.W.	58*	–	One hour only.
		„ 10 p.m., 19th	N.W.	61	–	14 hours gale.
		Stornoway, 19th	N.W.	–	8	
		Thurso, 19th	W.N.W.	–	10	
		Wick, 19th	N.W.	–	8	
		Nairn, 19th	S.S.W.	–	9	
		Aberdeen, 5 p.m., 19th	W.	57	–	Three hours gale.
		Alnwick Castle, 1 p.m., 19th	S.W. by W.	51	–	Two hours gale.
		Seaham, 3 p.m., 19th	W. by S.	40	–	
		Shields, 19th	W.	–	9	
		Moorside, 8 p.m., 19th	W.N.W.	43	–	
		Glasgow, 1 p.m., 19th	W. by N.	51	–	One hour only.
		Ardrossan, 19th	W.N.W.	–	10	
		Greencastle, 19th	W.N.W.	–	9	
		Donaghadee, 19th	S.	–	8	
		Kingstown, 19th	W.N.W.	–	10	
		Holyhead, 9 a.m., 19th	S. by W.	45	–	
		Valencia, 5 a.m, 19th	S.W. by S.	40	–	
		Falmouth, 5 p.m., 19th	W. by N.	41	–	
–	No gale. The depression passed to the north of these islands, and the wind changed from north to south, but without a gale.	—	—	–	–	
16	The wind increased to the force of a gale from the southward at intervals during the 26th and 27th, on many parts of our western coasts.	Stornoway, 26th	S.S.W.	–	8	
		Donaghadee, 26th	S.S.E.	–	8	
		Armagh, 4 p.m., 27th	S.S.W.	41	–	
		Holyhead, 2 p.m., 27th	S.	50	–	One hour only.
		Valencia, noon, 27th	S.W. by S.	63	–	Five hours gale.
		Roche's Point, 27th	S.	–	8	
17	The wind rose to a fresh gale from south-west at our western and northern stations, on the night of 27th or early morning of the 28th, after which the force died down.	Sandwick,* 1 a.m., 28th	W. by N.	53*	–	Sudden squall, one hour only.
		Stornoway, 27th	W.	–	8	
		Aberdeen, midnight, 27th	S.	–	8	
		Alnwick Castle, 10 p.m., 27th	S.W. by W.	47	–	
		Ardrossan,* 9 p.m., 27th	W.N.W.	–	9*	
		Greencastle,* 8 a.m., 28th	S.W.	–	9*	
		Donaghadee, 27th	S.	–	8	
		Valencia,* 6 and 7 a.m., 28th	S.S.W.	55*	–	Three hours gale.
18	A south-westerly gale, drawing into west at the more northern stations, was experienced on the night of the 29th or morning of the 30th	Stornoway, 28th	S.	–	8	
		Alnwick Castle, 3 p.m., 29th, and 8 a.m., 30th.	W. by S.	56	–	Three hours gale.
		Seaham, 11 a.m. to 1 p.m., 30th	W. by S.	40	–	
		Shields, 29th	W.S.W.	–	9	
		Scarborough, 2 p.m., 30th	W.	–	8	
		Glasgow, 11 a.m., 30th	W.	51	–	One hour.
		Ardrossan, 29th	W.S.W.	–	9	
		Greencastle, 30th	W.	–	9	
		Kingstown, 29th	W.	–	9	
		Holyhead, 1 p.m., 28th	S.	47	–	
		Liverpool, 29th	S.W.	–	8	
		Stonyhurst, noon, 30th	W.S.W.	40	–	
		Valencia, 3 a.m., 29th	S.W.	58	–	11 hours gale.
		Roche's Point, 29th	W.S.W.	–	8	
		Pembroke, 29th	W.	–	8	
		Falmouth, 5 p.m., 29th	S.W.	49	–	
		Plymouth, 29th	S.W.	–	8	
		Hurst Castle, 29th	W.	–	8	
		London, 29th	S.W.	–	8	
		Oxford, 29th	W.S.W.	–	8	

an hour, was reached *prior* to the hoisting or *subsequent* to the hauling down of the signal.

RETURN showing the Number of Telegrams sent to each Station, and

Descriptive Number.	DATE OF TELEGRAM. Day.	Hour.	COASTS TO WHICH SENT.	TELEGRAM.
51	30 March	3.0 p.m.	Ireland, S. and E.; Scotland, W.; England, N.W., W., S., S.E., and E.	Barometer falling and wind backing to south Valencia; look out for south gale. Hoist south cone
52	31 „	3.30 p.m.	England, S. and E. (south of Sutton Bridge).	Lower cone. Gale only blowing in north, England
53	1 April	3.30 p.m.	Ireland, S. and E.; Scotland, W.; England, N.W., W., S., S.E., and E.	Barometer falling Valencia; strong southerly winds, high sea; look out for south-west gale. Hoist south cone
54	2 „	11.10 a.m.	Scotland, E.	Strong south-west winds and high sea Ireland. Hoist south cone
55	4 „	11.20 a.m.	Ireland, S. and E.; Scotland, W.; England, N.W., W., and S. (west of Jersey).	Moderate south-west gale in south. Barometer falling in west, with high sea. Hoist south cone.
–	9 „	–	None	None
56	13 „	11.10 a.m.	Ireland, E.; Scotland, W.; England, N.W., W., S., S.E., and E.	Barometer falling very fast; heavy west gale Valencia; look out for south-west gale. Hoist south cone
57	13 „	4 p.m.	Scotland, E.	Barometer falling briskly in south; high in Norway. Hoist north cone
58	14 „	11.5 a.m.	Ireland, E.; Scotland, E. and W.; England, N.W., W., S., S.E., and E.	Lower cone. Gale has gone to south of France

Note.—The asterisk (*) after the name of any station indicates that force 9, or the velocity of 50 miles

the Storms reported on the Coasts of the British Islands in 1874—*continued.*

STORMS experienced on the Coasts of the British Isles in 1874.		MAXIMUM FORCE OBTAINED.				REMARKS.
Descriptive Number.	Storms.	Stations.	Direction.	Velocity. Miles per Hour.	Force. Beaufort Scale.	
19	A westerly gale was felt at our western and northern stations, and strong winds in the south on the night of the 31st	Sandwick,* 11 a.m., 1st	W. by S.	52*	–	One hour only.
		Thurso, 31st	S.W.	–	8	
		Alnwick Castle, 1 a.m., 1st	S.W.	41	–	
		Shields, 30th	W.	–	10	
		Glasgow, 1 a.m., 1st	S.W. by W.	42	–	
		Ardrossan, 31st	W.N.W.	–	9	
		Greencastle, 31st	W.	–	8	
		Kingstown, 31st	W.	–	10	
		Holyhead, 2 a.m., 1st	S.W.	45	–	
		Liverpool, 31st	W.S.W.	–	8	
		Valencia, 10 p.m., 31st	S.W.	55	–	One hour only.
20	A south-westerly gale set in at Valencia on the afternoon of the 1st, and extended to all coasts during the next day, reaching its maximum force on the night of the 2nd	Sumburgh Head, 3rd	W.	–	9	
		Sandwick, 1 p.m., 3rd	W.	62	–	Eight hours gale.
		Stornoway, 3rd	W.N.W.	–	8	
		Thurso, 3rd	W.S.W.	–	8	
		Aberdeen, noon, 3rd	W. by S.	42	–	
		Alnwick Castle, 9 a.m., 2nd	W.S.W.	67	–	10 hours gale.
		Seaham, 11 a.m., 2nd	S.W. by S.	45	–	
		Shields, 2nd	S.W.	–	10	
		Scarborough, 3rd	S.W.	–	8	
		Moorside, 4 p.m., 2nd	S.W. by W.	41	–	
		Glasgow, 3 a.m., 2nd	S.W.	42	–	
		Ardrossan, 3rd	W.S.W.	–	10	
		Greencastle, 2nd	S.W.	–	8	
		Donaghadee, 2nd	S.S.W.	–	8	
		Kingstown, 2nd	S.W.	–	10	
		Holyhead, 8 p.m., 1st	S. by W.	58	–	Gale lasted, with lulls, from 7 p.m., 1st, to 1 a.m., 3rd.
		„ 1 a.m., 3rd	S.W.	55	–	
		Liverpool, 2nd	S.S.W.	–	8	
		Valencia, 7 p.m., 2nd	S.W.	67	–	17 hours gale.
		Roche's Point, 2nd	W.S.W.	–	9	
		Pembroke, 2nd	W.S.W.	–	11	
		Portishead, 2nd	S.	–	8	
		Scilly, 2nd	S.W.	–	9	
		Falmouth, 8 p.m., 2nd	S.S.W.	53	–	Three hours gale.
		Plymouth, 2nd	S.W.	–	9	
		Hurst Castle, 2nd	S.W.	–	10	
		Dover, 2nd	W.S.W.	–	8	
		Kew, 11 p.m., 2nd	S.W. by S.	44	–	
		Yarmouth, 2nd	S.W.	–	8	
–	Strong south-westerly breezes were experienced on our south, west, and north coasts, which increased to a gale in some places.	Stornoway, 4th	S.S.W.	–	10	April 5th was Sunday, or the signals would have been lowered.
		Alnwick Castle, noon and 3 p.m., 4th.	S.W.	46	–	
		Greencastle, 4th	S.W.	–	8	
–	The wind blew strongly from the south for some hours on the evening of the 8th, in Ireland, and on the morning of the 9th along the remainder of our west and north coasts.	Sandwick,* 10 a.m., 9th	S. by E.	53*	–	Gale only lasted four hours.
		Holyhead,* 3 a.m., 9th	S. by E.	57*	–	Only three hours.
		Valencia, 6 and 7 p.m., 8th	S.S.W.	48	–	
21	The wind rose to a gale from south or south-west at some stations on the night of the 12th, and subsequently veered to the northward, whence the maximum forces were felt	Holyhead,* 6 a.m., 13th	S.S.E.	59*	–	Two hours.
		„ 5 and 7 a.m. 14th	N. by E.	49	–	April 12th was Sunday, so no warning of the gale could have been issued.
		Valencia,* 11 a.m. and noon 13th.	N.W. by W.	60*	–	15 hours.
		Roche's Point, 13th	N.N.W.	–	9	
		Pembroke,* 13th	S.S.W.	–	9*	
		Scilly, 13th	W.N.W.	–	11	
		Falmouth, midnight 13th	N.W. by N.	53	–	
		Plymouth,* 13th	S.W.	–	9*	
		Yarmouth, 3 p.m. 13th	S. by E.	43	–	

an hour, was reached *prior* to the hoisting or *subsequent* to the hauling down of the signal.

RETURN showing the Number of Telegrams sent to each Station, and

Descriptive Number.	DATE OF TELEGRAM. Day.	Hour.	COASTS TO WHICH SENT.	TELEGRAM.
–	16 April		None	None
–	11 June		None	None
–	6 August		None	None
59	1 September	3.50 p.m.	Ireland, S. and E.; Scotland, E. and W.; England, N.W., W. and S. (west of Jersey).	Barometer high France; low on north-west coasts; wind backing Valencia. Hoist south cone
60	2 „	3.50 p.m.	Same coasts	Lower south cone
61	14 September	3.30 p.m.	Scotland, E. and W. (with Newcastle)	Barometer falling rapidly Scotland; heavy south-west gale Stornoway. Hoist south cone
62	15 „	12.5 p.m.	Scotland, E. (with Newcastle)	Lower south cone
63	15 „	3.50 p.m.	Scotland, W.	Lower south cone
64	22 September	11.10 a.m.	Scotland, E. and W.; England, N.W., S. (east of Southampton), S.E. and E.	Easterly gale Greencastle; south-west gale Pembroke; barometer falling Ireland. Hoist south cone
65	22 „	4.0 p.m.	England, S. (east of Southampton), S.E. and E. (south of Hull).	Gale passing away to the northward. Lower south cone
66	23 „	11.0 a.m.	Scotland, E. and W.; England, N.W. and E. (north of Hull).	Gale has passed off to north-westward. Lower south cone
67	2 October	10.50 a.m.	Ireland, S. and E.; Scotland, W.; England, N.W., W. and S. (west of Jersey).	An easterly gale Stornoway; west gale Greencastle; north gale Valencia; barometer falling rapidly. Hoist north cone
68	2 „	10.50 a.m.	Scotland, E.; England S. (east of Southampton), S.E. and E.	East gale Stornoway; west gale Greencastle; north gale Valencia; south gale Norway; barometer falling rapidly. Hoist south cone
69	3 „	11.20 a.m.	England, S. (with Faversham); Ireland, S. (Cork only).	Barometer rising in west and in south, north-west gale blowing in north-west. Lower cone
70	3 „	3.40 p.m.	Ireland, S. (except Cork) and E.; Scotland, E. and W.; England, N.W., W. and E. (except Faversham).	Gale is passing away slowly to eastward. Lower cone

Note.—The asterisk (*) after the name of any station indicates that force 9, or the velocity of 50 miles

the Storms reported on the Coasts of the British Islands in 1874—*continued.*

STORMS experienced on the Coasts of the British Isles in 1874.		MAXIMUM FORCE OBTAINED.				REMARKS.
Descriptive Number.	Storms.	Stations.	Direction.	Velocity. Miles per Hour.	Force. Beaufort Scale.	
22	A west to north-west gale was experienced on the extreme northern Scotch coasts, on the night of the 16th April.	Sumburgh Head, 17th	N.	–	8	
		Sandwick,* 4 p.m., 16th	W. by N.	50*	–	
		Stornoway,* 16th	W.N.W.	–	10*	
		Thurso,* 16th	W.	–	9*	
		Wick, 16th	N.W.	–	8	
–	A slight north-west gale was felt at our north-western and northern stations, on the morning of June 11th.	Sandwick, 3 p.m., 11th	N.N.W.	40	–	Holyhead, anemometer out of action.
		Alnwick Castle,* 9 a.m., 11th	W. by S.	61*	–	The velocity exceeded 50 miles for only three hours at Alnwick.
		Seaham, 5 p.m., 11th	N.	40	–	
		Glasgow, 11 a.m., 11th	W. by N.	45	–	
		Greencastle, 8 a.m., 11th	W.N.W.	–	8	
		Donaghadee, 11th	N.N.W.	–	8	
		Kingstown, 11th	W.N.W.	–	8	
23	A depression passed down the North Sea in a south-easterly direction, and north-westerly gales were experienced on our north and north-east coasts, on the morning of the 6th August.	Sandwick, 5 a.m., 6th	N.W. by N.	40	–	
		Stornoway,* 5th	N.W.	–	10*	
		Thurso, 6th	N.W.	–	8	
		Wick, 6th	N.W.	–	8	
		Nairn, 6th	W.S.W.	–	8	
		Aberdeen, 2 a.m., 6th	W. by N.	49	–	
		Shields, 6th	N.N.W.	–	8	
–	The wind rose to a gale on the 1st September at Valencia and Holyhead, and fresh to strong southerly breezes were felt along our whole west coast.	Holyhead, 7 a.m., 2nd	S. by W.	41	–	
		Valencia, 11 p.m., 1st	S.S.W.	46	–	
		Stornoway, 1st	S.W.	–	8	
24	A fresh southerly gale was experienced at the northern and some of the western stations on the night of the 14th	Sumburgh Head, 15th	W.S.W.	–	8	
		Sandwick, 3 p.m., 15th	W. by S.	45	–	
		Stornoway,* 2 p.m., 14th	S. W.	–	11*	
		Aberdeen, 15th	S.S.W.	–	8	
		Alnwick Castle, 5 a.m., 15th	S.W.	42	–	
		Seaham, 7 a.m., 15th	S.S.W.	40	–	
		Holyhead, 1 a.m., 15th	S. by W.	46	–	
		Valencia, 2 a.m., 15th	S.S.W.	48	–	
25	A fresh southerly gale was experienced on the night of the 21st or early on the 22nd at most of our western stations	Greencastle, 8 a.m., 22nd	E.	–	8	
		Donaghadee, 8 a.m., 22nd	S.E.	–	8	
		Holyhead,* 8 a.m., 22nd	S.	58*	–	Seven hours gale.
		Valencia, 2 p.m., 22nd	S.W. by W.	40	–	
		Roche's Point,* 21st	S.	–	9*	
		Pembroke, 8 a.m., 22nd	S.W.	–	8	
		Scilly,* 21st	S.E.	–	10*	
		Plymouth, 22nd	S.	–	8	
		Falmouth, 11 p.m., 21st	S. by W.	45	–	
26	A fresh gale from west at the western stations, and drawing into south and south-east in the north, was felt over our Islands on the 2nd. In Scotland the north-westerly wind in the rear of the disturbance also reached the force of a gale.	Sumburgh Head, 2nd	S S.E.	–	8	
		Sandwick, 7 a.m., 2nd	S.S.E.	46	–	
		Stornoway,* 2nd	S.S.W.	–	10*	
		Thurso, 3rd	N.W.	–	9	
		Wick, 3rd	N.W.	–	8	
		Nairn, 2nd	S.	–	8	
		Aberdeen, 6 a.m., 2nd	S.S.E.	41	–	
		Leith, 2nd	W.	–	8	
		Alnwick Castle, 7 a.m., 3rd	W.S.W.	46	–	
		Glasgow, 9 a.m., 2nd	S.W.	45	–	
		Ardrossan, 3rd	W.N.W.	–	9	
		Greencastle, 3rd	W.N.W.	–	9	
		Kingstown, 3rd	W.	–	9	
		Holyhead, 2 a.m., 3rd	W. by N.	47	–	
		Liverpool, 3rd	W.	–	8	
		Stonyhurst, 1 p.m., 3rd	W.S.W.	41	–	
		Valencia, 10 p.m., 1st	S.W.	43	–	
		„ 2nd	N.N.W.	–	9	
		Pembroke, 3rd	W.N.W.	–	9	
		Falmouth, 11 a.m., 3rd	W. by N.	41	–	

an hour, was reached *prior* to the hoisting or *subsequent* to the hauling down of the signal.

RETURN showing the Number of Telegrams sent to each Station, and

Descriptive Number.	DATE OF TELEGRAM. Day.	Hour.	COASTS TO WHICH SENT.	TELEGRAM.
71	6 October -	10.40 a.m. -	Ireland, S. and E.; Scotland, E. and W.; England, N.W., W., S. (west of Exeter), and E. (Newcastle only).	Barometer falling fast in north-west. South-west gale Greencastle. Hoist south cone -
72	6 „ -	3.30 p.m. -	England, S. (east of Exeter); S.E. and E. (except Newcastle).	Barometer still falling in west. Southerly gale in Irish Channel. Hoist south cone -
73	7 „ -	11.10 a.m. -	Ireland, S. and E.; Scotland, E. and W.; England, N.W., W., S., S.E. and E.	Gale over for the present, and barometer rising. Lower cone - - - - - - -
74	8 October -	11.0 a.m. - -	Ireland, S. (Cork only); and E. (Dublin only).	Barometer beginning to fall, Valencia, with freshening southerly wind. Hoist south cone - - - - - - - - - -
75	8 „ -	2.40 p.m. -	Ireland S. (except Cork), and E. (except Dublin); Scotland, W.; England, N.W., W., and S.	South gale Valencia, with rising sea; barometer falling fast. Hoist south cone - -
76	8 „ -	3.40 p.m. -	Scotland, E.; England, E. and S.E. -	South gale Valencia, with rising sea; barometer falling fast. Hoist south cone - -
77	9 „	11.15 a.m. -	Ireland, S. and E.; Scotland E. (north of Grangemouth) and W.; England, N.W., W., S., S.E. and E.	Gale subsided in south, and travelling northerly. Lower cone - - - - - -
78	17 October -	3.40 p.m. -	Ireland, S. and E.; Scotland, W.; England, N.W., W. and S. (Devon and Cornwall).	South-westerly gale at Stornoway; wind backing at Valencia. Hoist south cone -
79	19 „ -	11.10 a.m. -	Same coasts - - - - - - -	Lower south cone - - - - - - -
80	20 „ -	11.0 a.m. - -	Scotland, E. and W.; Ireland, E. (Belfast only).	Fresh west-south-west gale in Shetlands. Barometer falling, Stornoway. Hoist south cone
81	20 „ -	3.40 p.m. -	Same coasts - - - - - - -	Lower south cone - - - - - - -
-	21 October -	- - -	None - - - - - - - -	None - - - - - - - - -

Note.—The asterisk (*) after the name of any station indicates that force 9, or the velocity of 50 miles

the Storms reported on the Coasts of the British Islands in 1874—*continued.*

STORMS experienced on the Coasts of the British Isles in 1874.		MAXIMUM FORCE OBTAINED.				
Descriptive Number.	Storms.	Stations.	Direction.	Velocity. Miles per Hour.	Force. Beaufort Scale.	REMARKS.
27	A south-westerly gale (fresh in the south-west, but moderate elsewhere) was felt on our west and south coasts on the morning of the 6th October	Seaham, 2 p.m., 6th	S.	44	–	
		Shields, 6th	S.W.	–	8	
		Moorside, midnight, 6th	S.W. by S.	45	–	
		Greencastle, 8 a.m., 6th	S.S.W.	–	8	
		Holyhead, 7 p.m., 6th	S.S.W.	43	–	
		Valencia,* 4 a.m., 6th	S.W. by S.	51*	–	Two hours only.
		Roche's Point, 6th	S.S.W.	–	8	
		Pembroke, 6th	S.W.	–	9	
		Portishead, 6th	S.	–	8	
		Scilly, 6th	S.S.W.	–	9	
		Falmouth, 10 p.m., 6th	S. by W.	43	–	
		Plymouth, 6th	S.W.	–	9	
		Hurst Castle, 6th	S.S.W.	–	8	
28	A southerly to south-easterly gale was experienced on our west and north coasts on the 9th	Sumburgh Head, 9th	S.	–	8	
		Sandwick, 6 a.m., 9th	S.S.E.	52	–	One hour only.
		Stornoway, 8th	S.S.E.	–	9	
		Wick, 9th	S.	–	10	
		Nairn, 8th	S.W.	–	8	
		Aberdeen, 9th	S.	–	8	
		Greencastle, 8th	S.S.E.	–	9	
		Holyhead, midnight, 8th	S. by E.	55	–	Six hours gale.
		Valencia, 7 p.m., 8th	S.	57	–	Five hours gale.
		Roche's Point, 8th	S.S.W.	–	9	
		Pembroke, 9th	W.S.W.	–	8	
29	A south-westerly gale, which blew freshly in the south-west, and at Stornoway, was experienced at a few stations on the 17th	Sumburgh Head, 8 a.m., 17th	S.	–	8	
		Aberdeen, 8 a.m., 17th	S.	–	8	
		Sandwick, 8 and 9 a.m., 17th	S.	44	–	October 18, Sunday.
		Stornoway,* 17th	S.S.W.	–	10*	
		Greencastle, 18th	S.S.W.	–	8	
		Holyhead, 2 a.m., 17th	S. by W.	49	–	
		Valencia,* midnight, 16th	S. by W.	55*	–	Five hours gale.
		Roche's Point,* 17th	S.S.W.	–	9*	
–	No gale	Sumburgh Head, 8 a.m., 20th	W.S.W.	–	8	These signals were lowered too soon, inasmuch as the most serious storm of the year followed in the course of the night. The barometer, however, did not begin to fall rapidly until after 6 p.m., so that without later reports than those for 2 p.m. it was not possible to say with certainty that the gale was imminent, though the weather was very unsettled.
30	An exceedingly heavy gale from west to north-west was felt at all stations on the 21st; most severely in the north.	Sumburgh Head,* 21st	N.	–	10*	
		Sandwick,* 9 a.m., 21st	N. by W.	72*	–	29 hours gale.
		Stornoway,* 21st	N.W.	–	11*	
		Thurso,* 21st	N.N.E.	–	11*	
		Wick,* 21st	N.W.	–	10*	
		Nairn,* 21st	W.N.W.	–	10*	
		Aberdeen,* noon, 21st	W.N.W.	57*	–	Four hours gale.
		Leith,* 21st	W.	–	10*	
		Alnwick Castle,* 5 and 10 a.m., 21st.	S.W. and W.	66*	–	Seven hours gale.
		Seaham, 6 and 11 a.m., 21st	S.W. and W.	47	–	
		Shields,* 21st	W.N.W.	–	10*	
		Scarborough,* 21st	W.	–	9*	
		Moorside, 11 a.m., 21st	N.W. by W.	41	–	
		Glasgow,* 5 a.m., 21st	W.S.W.	63*	–	Three hours gale.
		Ardrossan,* 21st	W.N.W.	–	11*	
		Greencastle,* 21st	W.N.W.	–	9*	
		Armagh, 2 a.m., 21st	S.W. by S.	40	–	
		Donaghadee,* 21st	W.S.W.	–	9*	
		Kingstown,* 21st	W.N.W.	–	9*	
		Holyhead,* 4 a.m., 21st	S.W.	63*	–	Eight hours gale.
		Liverpool,* 21st	W.S.W.	–	9*	
		Stonyhurst, 8 a.m., 21st	W.S.W.	42	–	
		Valencia,* 2 a.m., 21st	W.S.W.	56*	–	Five hours gale.
		Pembroke,* 21st	W.S.W.	–	10*	
		Portishead, 21st	W.S.W.	–	8	
		Falmouth, 9 a.m., 21st	W.S.W.	45	–	
		Hurst Castle, 21st	W.	–	8	
		Dover, 21st	W.S.W.	–	8	
		London,* 21st	W.S.W.	–	9*	
		Yarmouth, 21st	W.S.W.	–	8	

an hour, was reached *prior* to the hoisting or *subsequent* to the hauling down of the signal.

RETURN showing the Number of Telegrams sent to each Station, and

Descriptive Number.	DATE OF TELEGRAM. Day.	Hour.	COASTS TO WHICH SENT.	TELEGRAM.
32	22 October	11 a.m.	Ireland, S. and E. (except Belfast)	Barometer falling fast Valencia, and wind has backed to south. Hoist south cone
33	22 „	1.10 p.m.	Ireland, S. and E. (except Belfast)	Depression is passing to the south-eastward. Lower south cone
34	24 „	3.40 p.m.	Ireland, S. and E.; Scotland, E. (Wick only), and W.; England, N.W., W., and S. (Devon and Cornwall only).	Barometer still falling in west, and southerly wind increasing, with rough sea. Hoist south cone
35	26 „	11.10 p.m.	Same coasts	Lower south cone
36	3 November	4.0 p.m.	Ireland, E. (Belfast only); Scotland, E. and W.; England, N.W.	Barometer falling fast north, with south-west wind freshening; looks like gale. Hoist south cone
37	5 „	11.0 a.m	Same coasts	Lower cone. Gale has passed to the northward of Scotland
38	9 „	3.45 p.m.	Ireland, E. (Belfast only); Scotland, E. and W.; England, N.W.	Barometer falling fast Thurso; wind backing; looks bad. Hoist south cone
39	10 „	3.30 p.m.	Same coasts	Lower cone
90	11 „	3.40 p.m.	England, E. and S.E.	Barometer very low in Sweden; north gale in Shetland Islands. Hoist north cone
91	12 „	11.20 a.m.	Same coasts	Lower cone. Wind has moderated in north
92	16 „	3.30 p.m.	Ireland, S. and E.; Scotland E. and W.; England, N.W., W., S., S.E., and E.	Barometer falling fast in north Ireland; westerly wind increasing; look out for north-west gale. Hoist north cone
93	17 „	11.10 a.m.	Scotland, E. and W.; England, S. (east of Southampton), S.E. and E.	Lower cone. No serious gale this morning
94	17 „	3.30 p.m.	Ireland, S. and E.; England, N.W., W., and S. (west of Southampton).	Lower cone. Wind falling light
95	26 „	4.0 p.m.	Ireland, S. and E.; Scotland, E., and W.; England, N.W. and W.	Barometer falling quickly Valencia; rising Thurso; weather very unsettled. Hoist south cone
96	27 „	11.30 a.m.	Ireland, S. and E.; Scotland, E. (south of Grangemouth), and W.; England, N.W. and W.	Lower cone. Gale has passed to the north of Scotland
97	28 „	3.30 p.m.	Ireland, S. and E.; Scotland, E. and W.; England, N.W. and W.	Barometer falling briskly in south-west; southerly wind increasing. Hoist south cone.

Note.—The asterisk (*) after the name of any station indicates that force 9, or the velocity of 50 miles

the Storms reported on the Coasts of the British Islands in 1874—*continued.*

STORMS experienced on the Coasts of the British Isles in 1874.		MAXIMUM FORCE OBTAINED.				REMARKS.
Descriptive Number.	Storms.	Stations.	Direction.	Velocity. Miles per Hour.	Force. Beaufort Scale.	
–	No gale - - - - - -	- - - - -	- -	–	–	The fall of the barometer at Valencia was not so serious as was reported.
–	The wind rose to the force of a gale from the southward at a few stations on the 25th -	Sumburgh Head, 8 a.m., 25th	W.S.W.	–	8	
		Stornoway, 25th - - -	S.W.	–	8	
		Aberdeen, 7 p.m., 24th - -	S.	–	8	
		Holyhead, 5 a.m., 25th -	S. by W.	51	–	Two hours gale.
		Valencia, midnight, 24th -	S.S.W.	54	–	One hour only.
		Pembroke, 6 p.m., 24th -	S.W.	–	8	
–	Fresh westerly winds were experienced in Scotland, but gales in the extreme north only -	Sumburgh Head, 3rd - -	W.	–	8	
		Sandwick, 6 p.m., 3rd - -	W.	47	–	
		Stornoway, 4th - - -	S.S.W.	–	9	
31	A depression again passed to the northward of Scotland, and the wind freshened considerably, reaching the force of a gale in some places - -	Sumburgh Head,* 9th - -	N.	–	9*	
		Sandwick, midnight, 9th -	W.N.W.	55	–	Six hours gale.
		Thurso, 9th - - - -	W.N.W.	–	8	
		Alnwick Castle, 3 p.m., 9th -	S.W. by W.	47	–	
		Holyhead, 5 p.m., 10th -	N. by W.	46	–	Gale commenced, noon 10th.
–	No gale on the east coast, but the north wind increased considerably in force.	—	—	–	–	
32	The wind rose to a gale from north-west on some parts of our west coasts - - -	Greencastle, 17th - - -	W.N.W.	–	8	
		Holyhead, 9 p.m., 16th -	W. by N.	44	–	
		Liverpool, 16th - - -	W.S.W	–	8	
		Roche's Point, 17th - -	N.W.	–	8	
		Pembroke, 16th - - -	W.	–	9	
		Falmouth, 2 a.m., 17th -	W.N.W.	51	–	
33	A depression again appeared to the northward of Scotland, and moderate gales were experienced at our most northern stations - - - - -	Sumburgh Head, 27th - -	S.S.E.	–	8	
		Sandwick, 7 a.m., 27th -	S.S.E.	46	–	
		Stornoway, 27th - - -	S.	–	8	
		Wick, 27th - - - -	S.	–	8	
		Pembroke, 26th - - -	S.S.E.	–	8	
34	A depression passed over the north of England, and hard galesw ere experienced on all coasts ; from west in the south and west, from south-east on our north-east coasts, and from east over Scotland.	Sumburgh Head, 28th - -	S.E.	–	8	
		Sandwick 9 p.m., 29th - -	E.	44	–	
		Wick, 29th - - - -	E.	–	9	
		Aberdeen, 2–5 p.m., 29th -	E. and E. by N.	60	–	
		Leith, 29th - - - -	E.	–	9	
		Alnwick Castle, 6 a.m., 29th	E.S.E.	43	–	
		Shields,* 29th - - -	S.E.	–	10*	
		Scarborough,* 29th - -	S.E.	–	10*	
		Holyhead, 5 p.m., 29th -	W.	48	–	
		Liverpool, 29th - - -	W.	–	8	
		Valencia, 29th - - -	N.	–	8	
		Roche's Point, 29th - -	N.W.	–	8	
		Pembroke, 29th - - -	W.N.W.	–	10	
		Portishead, 29th - - -	W.	–	8	
		Scilly,* 29th - - -	N.W.	–	11*	
		Falmouth,* 9 a.m., 29th -	W. by N.	59*	–	
		Plymouth, 29th - - -	N.W.	–	8	
		Hurst Castle,* 29th - -	W.N.W.	–	9*	
		London,* 29th - - -	W.	–	9*	
		Yarmouth,* 8 a.m., 29th -	S.E. by E.	59*	–	

an hour, was reached *prior* to the hoisting or *subsequent* to the hauling down of the signal.

RETURN showing the Number of Telegrams sent to each Station, and

DATE OF TELEGRAM.		COASTS TO WHICH SENT.	TELEGRAM.
Descriptive Number.	Day. Hour.		
98	1 December 4.30 p.m.	Ireland, S. and E.; England, N.W., W., and S. (west of Southampton).	Rise of barometer checked in west; sea high. Looks like another gale. Hoist south cone-
99	2 „ 11.15 a.m.	Same coast	Lower cone. Signs of gale have gone down
100	4 December 11.10 a.m.	Scotland, E. and W.	Barometer falling very fast in north. Hoist south cone
101	4 „ 3.15 p.m.	Ireland, S. and E.; England, N.W., W., and S. (Devon and Cornwall only); and E. (north of Hull).	Barometer falling very fast in north. Hoist south cone
102	5 „ Noon	Ireland, E.; England, W. (south of Aberystwith), and S. (Devon and Cornwall only).	Lower cone. Gale has passed off to north of Scotland
103	8 December 11.0 a.m.	Ireland, S. and E.; Scotland, W.; England, N.W., W., S., S.E., and E.	Sudden serious fall of the barometer in west; south gale Cork and Pembroke. Hoist south cone.
104	10 December Noon	Ireland. S. and E.; England, N.W., W., and S. (Devon and Cornwall only).	Barometer falling Valencia; southerly wind increasing, sea rising. Hoist south cone.

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the Storms reported on the Coasts of the British Islands in 1874—*continued.*

STORMS experienced on the Coasts of the British Isles in 1874.		MAXIMUM FORCE OBTAINED.				REMARKS.
Descriptive Number.	Storms.	Stations.	Direction.	Velocity. Miles per Hour.	Force. Beaufort Scale.	
–	No gale, but fresh northerly breezes prevailed on some coasts.	Holyhead, 4 a.m., 2nd	N.E.	48	–	
35	A fresh gale was experienced in the north, north-west, and north-east, and strong wind in the south of these Islands on the 4th and 5th December	Sumburgh Head, 5th	W.N.W.	–	9	
		Sandwick, 7 p.m., 4th	W.	65	–	
		Stornoway, 4th	W.S.W.	–	8	
		Leith, 4th	S.W.	–	8	
		Alnwick Castle,* 5 p.m., 4th	W.S.W.	56*	–	
		Glasgow, 3 p.m., 4th	S.W. by S.	45	–	
		Holyhead, midnight, 5th	S.W.	46	–	
36	A depression passed in a due easterly direction over central England, and the wind rose to a gale, first from south, and, after the disturbance had passed off, from the northward.	Aberdeen, 11 p.m., 8th	N.E.	40	–	
		Leith, 8th	E.	–	9*	
		Alnwick Castle, 11 p.m., 8th	N.E. by N.	53	–	Two hours gale.
		Seaham, midnight, 8th	N.E.	61	–	Three hours gale.
		Shields, 8th	S.E.	–	8	
		Scarborough, 9th	N.	–	10	
		Glasgow, 8 p.m., 8th	N.E.	40	–	
		Donaghadee, 8th	W.	–	–	
		Holyhead, 3 a.m., 9th	N.N.E.	74	–	Eight hours gale.
		Valencia,* 3 and 7 p.m., 8th	W. by N. / N.W. by W.	53*	–	15 hours gale.
		„	N.W.	–	11	
		Roche's Point,* 8 a.m., 8th	S.S.W.	–	11*	
		Pembroke, 8th	W.S.W.	–	10	
		Portishead, 8th	W.S.W.	–	9	
		Scilly, 9th	N.W.	–	11	
		Falmouth, 11 p.m., 8th	W.	66	–	Seven hours gale.
		Plymouth, 9th	W.	–	10	
		Hurst Castle, 9th	W.N.W.	–	10	
		London, 9th	W.S.W.	–	9	
37	A disturbance travelled across our Islands in a manner similar to the last; and a severe westerly gale was experienced in the west and south-west, and from south-east in the north.	Sandwick, 5 a.m., 11th	S.S.E.	45	–	
		Aberdeen,* 1 p.m., 11th	S.E.	52*	–	One hour only.
		Armagh, 11 p.m., 10th	S.S.E.	45	–	
		Donaghadee, 10th	S.S.E.	–	8	
		Holyhead, 1 a.m., 11th	S by E.	57	–	Five hours gale.
		Valencia, midnight, 11th, and 4 a.m., 12th.	N.W.	48	–	
		Roche's Point, 11th	N.W.	–	10	
		Pembroke, 11th	W.	–	10	
		Portishead, 10th	S.W.	–	8	
		Scilly, 12th	N.W.	–	11	
		Falmouth, 2 and 10 p.m., 11th	W.N.W.	55	–	Ten hours gale (with slight lulls).
		Plymouth, 11th	W.	–	8	
		Hurst Castle,* 11th	W.	–	10*	
		Yarmouth, 9 a.m., 11th	S.E. by S.	49	–	

an hour, was reached *prior* to the hoisting or *subsequent* to the hauling down of the signal.

RETURN showing the Number of Telegrams sent to each Station, and

Descriptive Number.	DATE OF TELEGRAM. Day.	Hour.	COASTS TO WHICH SENT.	TELEGRAM.
105	15 December	3.40 p.m.	Ireland, S. and E.; Scotland, E. and W.; England, N.W., W., S., S.E., and E.	Barometer falling fast in west. South-west gale Valencia. Hoist south cone
106	16 „	11.20 a.m.	Scotland, E. and W.	Lowest barometer at Bristol. Northerly gales in Ireland, and south-east wind at Dover. Lower cone
107	17 „	Noon	Ireland, S. and E.; England, N.W., W., S., S.E., and E.	Lower cone
108	19 December	4.0 p.m.	Ireland, E. (Belfast only); Scotland, E. and W.; England, N.W. and E. (north of Hull).	Barometer falling again in north; north-westerly winds likely to increase. Hoist north cone
109	21 „	11.10 a.m.	Same coasts	Lower cone
110	31 December	3.40 p.m.	Ireland, S. and E.; Scotland, W.; England, N.W., W., and S. (Devon and Cornwall only)	South-east gale Valencia; barometer falling fast, and sea rising. Hoist south cone
	1875:			
111	1 January	11.10 a.m.	Scotland, E.; England, E. (north of Hull).	Southerly gale in west. Hoist south cone

Note.—The asterisk (*) after the name of any station indicates that force 9, or the velocity of 50 miles

the Storms reported on the Coasts of the British Islands in 1874—*continued*.

STORMS experienced on the Coasts of the British Isles in 1874.		MAXIMUM FORCE OBTAINED.				REMARKS.
Descriptive Number.	Storms.	Stations.	Direction.	Velocity, Miles per Hour.	Force. Beaufort Scale.	
38	A gale was felt on our west, south, and south-east coasts, on the night of the 15th, or on the 16th	Holyhead, 7 p.m., 15th	S. by E.	51	–	One hour only.
		„ 8 a.m., 16th	N.	–	10	
		Valencia, midnight, 15th	N.W.	50	–	One hour only.
		Roche's Point, 16th	N.N.W.	–	9	
		Portishead, 16th	S.E.	–	8	
		Scilly, 15th	W.	–	8	
		„ 16th	N.N.E.	–	9	
		Falmouth, 4 p.m., 16th	N.N.E.	45	–	
		Plymouth, 16th	N.E.	–	8	
		Hurst Castle, 15th	S.	–	8	
		„ 16th	E.	–	8	
		Yarmouth, 7 p.m., 16th	E.N.E.	46	–	
–	The northerly wind increased to a gale at a few stations on the 19th, and again at Holyhead on the 20th	Sumburgh Head,* 19th	N.	–	9*	
		Sandwick,* 3 p.m., 19th	N.W.	52*	–	One hour only.
		Shields, 20th	N.	–	8	
		Holyhead, 3 p.m., 19th	N.	46	–	
		„ 6 a.m., 20th	N.W. by N.			
39	A strong southerly to south-easterly gale was felt on all coasts on the 1st January	Sumburgh Head, 1st January	S.E.	–	9	
		Stornoway, 2nd	S.	–	9	
		Wick, 1st	S.E.	–	8	
		Nairn, 1st	S.E.	–	9	
		Aberdeen, 10 p.m., 1st	S.E. by S.	51	–	Three hours gale.
		„ midnight, 1st				
		Alnwick Castle, 9 p.m., 1st	S. by E.	46	–	
		Shields, 1st	S.	–	9	
		Greencastle, 1st	S.S.E.	–	9	
		Armagh, 1 and 8 p.m., 1st	S.E. by S.	43	–	
		Kingstown, 1st	S.S.E.	–	10	
		Holyhead, 10 p.m., 1st	S. by E.	55	–	Two hours gale.
		Valencia, 7 p.m., 1st	S.W.	56	–	Six hours gale.
		Roche's Point, 1st	S.E.	–	9	
		Pembroke, 1st	S.E.	–	9	
		Falmouth, 3, 5, and 8 a.m., 1st	S.E. by S.	44	–	
		Plymouth, 1st	S.E.	–	8	
		Yarmouth,* 10 p.m. to midnight, 1st.	S.S.E.	50*	–	Three hours gale.

an hour, was reached *prior* to the hoisting or *subsequent* to the hauling down of the signal.

SUMMARY.

COASTS.		NUMBER OF TELEGRAMS.	
Ireland	South	Orders to hoist signal	1*p*. 4*a*. 5*e*. 8*c*. 12*a*. 15*e*. 22*c*. 24*p*. 27*a*. 28*b*. 33*a*. 39*p*. 42*a*. 46*c*. 48*a*. 49*a*. 51*a*. 53*a*. 55*b*. 59*b*. 67*a*. 71*p*. 75*a*. 78*e*. 82*c*. 84*b*. 92*a*. 95*c*. 97*a*. 98*c*. 101*b*. 103*e*. 104*a*. 105*a*. 110*a*.
		Orders to hoist signal, Galway only.	20*b*.
		Repetitions of orders to hoist signal.	35*a*.
		Orders to lower signal	10. 13. 21. 23. 29. 37. 45. 47. 60. 70. 73. 77. 79. 83. 85. 94. 96. 99. 107.
Ditto	East	Orders to hoist signal	1*a*. 4*b*. 5*a*. 8*b*. 12*b*. 15*a*. 22*b*. 24*a*. 27*a*. 28*c*. 33*a*. 39*b*. 42*a*. 46*c*. 48*a*. 49*a*. 51*a*. 53*a*. 55*b*. 56*s*. 59*b*. 67*a*. 71*a*. 74*b*. 78*b*. 82*c*. 84*b*. 92*a*. 95*c*. 97*a*. 98*c*. 101*c*. 103*a*. 104*a*. 105*b*. 110*a*.
		Orders to hoist signal, Belfast only.	18*b*. 20*c*. 80*c*. 86*b*. 88*b*. 108*b*.
		Repetitions of orders to hoist signal.	35*a*.
		Orders to lower signal	10. 13. 21. 23. 29. 37. 45. 47. 58. 60. 70. 73. 77. 79. 83. 85. 87. 89. 94. 96. 99. 102. 107.
		Orders to lower signal, Belfast only.	81. 109.
Scotland	East	Orders to hoist signal	1*a*. 4*c*. 5*a*. 8*b*. 15*c*. 18*b*. 22*b*. 24*c*. 28*c*. 31*b*. 33*a*. 40*c*. 44*a*. 49*b*. 54*a*. 57*c*. 59*b*. 61*a*. 64*c*. 68*a*. 71*b*. 76*a*. 80*c*. 86*b*. 88*a*. 92*c*. 95*a*. 97*a*. 100*a*. 105*c*. 108*p*. 111*a*.
		Orders to hoist signal, Wick only.	20*a*. 84*b*.
		Repetitions of orders to hoist signal.	35*a*.
		Orders to lower signal	11. 17. 19. 21. 23. 29. 32. 38. 41. 58. 60. 62. 66. 70. 73. 77. 81. 87. 89. 93. 106. 109.
		Orders to lower signal, Wick only.	85

Note.—It will be remembered that the descriptive numbers of the Telegrams and Storms are quite independent of each other; two, and sometimes three, Telegrams referring to one Storm.

- - - - - - - - - SUMMARY.

GALES REPORTED.	REMARKS. Total Number of Orders to Hoist, and Repetitions.	Warnings justified by subsequent Gales, Force 8 and upwards. *a*	Warnings justified by subsequent Strong Winds, Forces 6 and 7. *b*	Warnings not justified by subsequent Weather. *c*	Warnings Late, Force 9 reached at two Stations before Issue. *e*	Warnings partially Late, Force 9 reached at one Station before Issue. *p*	Warnings Late, owing to Sundays or Telegraphic Errors. *s*	Storms for which no Warning was Issued.
1. 2. 3. 6. 8. 11. 12. 13. 14. 15. 16. 18. 19. 20. 21. 25. 26. 27. 28. 29. 30. 32. 34. 36. 37. 38. 39.	37	17	6	6	4	4	–	21*s*. 25. 30.
1. 3. 7. 8. 11. 12. 13. 15. 16. 18. 19. 20. 21. 25. 26. 27. 30. 32. 34. 36. 37. 39.	43	19	15	8	–	–	1	7*s*. 25. 30.
1. 3. 4. 7. 9. 10. 13. 15. 20. 22. 23. 24. 26. 28. 30. 31. 33. 34. 35. 36. 37*p*. 39.	35	15	9	10	–	1	–	4*s*. 7*s*. 9*s*. 22. 23. 30. 36. 37*p*.
Carried forward - - -	115	51	30	24	4	5	1	

SUMMARY—*continued.*

COASTS.		NUMBER OF TELEGRAMS.	
Scotland	West (Clyde)	Orders to hoist signal	1*a*. 4*c*. 5*b*. 8*b*. 12*b*. 15*a*. 18*b*. 20*b*. 22*b*. 24*a*. 27*a*. 28*c*. 31*b*. 33*a*. 40*b*. 42*a*. 48*b*. 49*a*. 51*a*. 53*a*. 55*b*. 56*b*. 59*b*. 61*a*. 64*c*. 67*a*. 71*b*. 75*a*. 78*p*. 80*c*. 84*b*. 86*b*. 88*b*. 92*b*. 95*b*. 97*b*. 100*a*. 103*a*. 105*c*. 108*b*. 110*a*.
		Repetitions of orders to hoist signal.	35*b*.
		Orders to lower signal	11. 13. 21. 23. 29. 32. 41. 58. 60. 63. 66. 70. 73. 77. 79. 81. 85. 87. 89. 93. 96. 106. 109.
England	North-west	Orders to hoist signal	1*a*. 4*a*. 5*a*. 8*c*. 12*a*. 15*a*. 20*b*. 22*c*. 24*b*. 27*a*. 28*b*. 33*a*. 39*a*. 42*a*. 46*c*. 48*a*. 49*a*. 51*a*. 53*a*. 55*b*. 56*s*. 59*b*. 64*e*. 67*a*. 71*a*. 75*a*. 78*p*. 84*b*. 86*c*. 88*a*. 92*a*. 95*c*. 97*a*. 98*c*. 101*b*. 103*a*. 104*a*. 105*a*. 108*a*. 110*a*.
		Repetitions of orders to hoist signal.	35*a*.
		Orders to lower signal	11. 13. 21. 23. 29. 37. 45. 47. 58. 60. 66. 70. 73. 77. 79. 85. 87. 89. 94. 96. 99. 107. 109.
Ditto	West	Orders to hoist signal	1*a*. 4*a*. 5*a*. 8*c*. 12*b*. 24*a*. 27*b*. 28*b*. 33*a*. 39*a*. 42*b*. 46*c*. 48*b*. 49*a*. 51*b*. 53*a*. 55*b*. 56*s*. 59*b*. 67*a*. 71*a*. 75*a*. 78*b*. 84*b*. 92*a*. 95*c*. 97*a*. 98*c*. 101*b*. 103*a*. 104*a*. 105*a*. 110*a*.
		Orders to hoist signal South of Milford.	14*a*.
		Orders to hoist signal North of Milford.	15*a*. 22*c*.
		Repetitions of orders to hoist signal.	35*b*.
		Orders to lower signal	10. 13. 23. 29. 37. 45. 47. 58. 60. 70. 73. 77. 79. 85. 94. 96. 99. 107.
		Orders to lower signal South of Aberystwith.	102.
Ditto	South	Orders to hoist signal	1*b*. 3*p*. 12*a*. 14*a*. 28*b*. 43*b*. 51*b*. 53*a*. 56*a*. 71*a*. 75*b*. 92*a*. 103*a*. 105*a*.
		Orders to hoist signal, Devon and Cornwall only.	5*a*. 24*a*. 33*a*. 39*a*. 46*c*. 49*a*. 55*b*. 59*b*. 67*a*. 78*b*. 84*b*. 98*c*. 101*c*. 104*a*. 110*a*.
		Orders to hoist signal East of Plymouth.	6*b*. 25*b*. 34*a*. 40*c*. 64*b*. 68*b*.
		Repetitions of orders to hoist signal.	—

Note.—It will be remembered that the descriptive numbers of the Telegrams and Storms are quite independent of each other; two, and sometimes three, Telegrams referring to one Storm.

SUMMARY—*continued.*

GALES REPORTED.	REMARKS.							
	Total Number of Orders to Hoist, and Repetitions.	Warnings justified by subsequent Gales, Force 8 and upwards. *a*	Warnings justified by subsequent Strong Winds, Forces 6 and 7. *b*	Warnings not justified by subsequent Weather. *c*	Warnings Late, Force 9 reached at two Stations before Issue. *e*	Warnings partially Late, Force 9 reached at one Station before Issue. *p*	Warnings Late, owing to Sundays or Telegraphic Errors. *s*	Storms for which no Warning was Issued.
Brought forward - - -	115	51	30	24	4	5	1	
1. 7. 8. 11. 13. 15. 17. 18. 19. 20. 24. 26. 28. 29. 30. 35. 36. 39.	42	15	21	5	–	1	–	7*s*. 17. 30.
1. 2. 3. 6. 8. 12. 13. 14. 15. 16. 18. 19. 20. 25. 26. 27. 28. 30. 32. 34. 36. 37. 38. 39.	41	25	7	6	1	1	1	30.
1. 2. 3. 8. 11. 13. 14. 18. 20. 26. 27. 28. 30. 32. 34. 36. 37. 38. 39.	37	19	12	5	–	–	1	30.
2. 6. 8. 20. 21. 30. 32. 34. 36. 37. 38.	36	17	14	4	–	1	–	30. 34.
3. 11. 13. 14. 18. 25. 26. 27. 39.	–	–	–	–	–	–	–	25*p*.
- - - - - -	–	–	–	–	–	–	–	37*p*.
Carried forward - - -	271	127	84	44	5	8	3	

SUMMARY—*continued.* - - - - - - - - -

COASTS.		NUMBER OF TELEGRAMS.	
England - -	South—*continued*	Repetitions of orders to hoist signal, Devon and Cornwall only.	35*b*.
		Orders to lower signal - -	2. 13. 30. 45. 52. 58. 69. 73. 77. 93. 107.
		Orders to lower signal, Devon and Cornwall only.	37. 47. 60. 79. 85. 99. 102.
		Orders to lower signal East of Plymouth.	7. 26. 36. 41. 65.
Ditto - -	South-east -	Orders to hoist signal - -	1*b*. 3*a*. 6*b*. 14*b*. 24*b*. 34*a*. 43*b*. 51*b*. 53*a*. 56*a*. 64*c*. 68*b*. 69*b*. 71*b*. 76*c*. 90*c*. 92*b*. 103*b*. 105*a*.
		Repetitions of orders to hoist signal.	—
		Orders to lower signal - -	2. 7. 36. 58. 65. 73. 77. 91. 93. 107.
Ditto - -	East - -	Orders to hoist signal - -	1*a*. 3*c*. 6*c*. 16*b*. 24*b*. 43*a*. 51*a*. 53*a*. 56*b*. 64*b*. 68*b*. 72*a*. 76*c*. 90*b*. 92*c*. 103*a*. 105*b*.
		Orders to hoist signal North of Hull.	9*p*. 22*b*. 23*a*. 40*c*. 50*a*. 101*a*. 108*a*. 111*a*. -
		Orders to hoist signal South of Hull.	34*a*.
		Repetitions of orders to hoist signal North of Hull.	35*b*.
		Orders to lower signal - -	2. 7. 17. 58. 70. 73. 77. 91. 93. 107.
		Orders to lower signal North of Hull.	11. 23. 41. 66. 109.
		Orders to lower signal South of Hull.	36. 52. 65.

Note.—It will be remembered that the descriptive numbers of the Telegrams and Storms are quite independent of each other; two, and sometimes three, Telegrams referring to one Storm.

SUMMARY—*continued.*

GALES REPORTED.	REMARKS. Total Number of Orders to Hoist, and Repetitions.	Warnings justified by subsequent Gales, Force 8 and upwards. *a*	Warnings justified by subsequent Strong Winds, Forces 6 and 7. *b*	Warnings not justified by subsequent Weather. *c*	Warnings Late, Force 9 reached at two Stations before Issue. *e*	Warnings partially Late, Force 9 reached at one Station before Issue. *p*	Warnings Late, owing to Sundays or Telegraphic Errors. *s*	Storms for which no Warning was Issued.
Brought forward - - -	271	127	84	44	5	8	3	
2. 13. 20. 21. 30. 34. 38. -	19	5	11	3	–	–	–	30. 34.
1. 5. 7. 12. 13. 15. 19. 20. 27. 30. 34. 36. 18. 35.	27	12	9	5	–	1	–	7*s*. 30. 34.
TOTALS for Year - -	317	144	104	52	5	9	3	
Per-centages - - -	–	45·4	32·8	16·4	1·5	2·8	1·0	

WEATHER INTELLIGENCE.

RETURNS showing the List of Places to which Telegraphic Weather Intelligence was sent in 1874, arranged according to Coasts; and, showing the Number of Telegrams sent to each Station, and the Storms reported on the Coasts of the British Islands, in 1874 (in continuation of Parliamentary Paper, No. 223, of Session 1874).

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed,*
20 *May* 1875.

210.

Under 3 *oz.*

TRAINING SHIPS.

RETURN to an Order of the Honourable The House of Commons, dated 8 February 1875;—*for*,

COPY "of a CIRCULAR LETTER, addressed by the BOARD of TRADE to the SECRETARIES of the different TRAINING SHIPS, and of their REPLIES, and TABULAR STATEMENTS in answer thereto, showing the Number of BOYS who have entered the ROYAL NAVY, the MERCHANT SERVICE, and other Occupations on Shore respectively, the Length and Pecuniary Terms of the Indentures of Apprenticeship, and the Place where established; Class, Staff, and Working Expenses of the several Vessels."

Board of Trade, Whitehall, 8 February 1875.

T. H. FARRER.

(Mr. Cavendish Bentinck.)

Ordered, by The House of Commons, *to be Printed*, 8 *February* 1875.

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COPY of a CIRCULAR LETTER, addressed by the BOARD of TRADE to the SECRETARIES of the different TRAINING SHIPS, and of their REPLIES, and TABULAR STATEMENTS in answer thereto, showing the Number of BOYS who have entered the ROYAL NAVY, the MERCHANT SERVICE, and other Occupations on Shore respectively, the Length and Pecuniary Terms of the Indentures of Apprenticeship, and the Place where established; Class, Staff, and Working Expenses of the several Vessels.

CIRCULAR LETTER sent by the Board of Trade to the Secretaries of the different Training Ships.

TRAINING SHIPS.

(M. 13,781.)

Board of Trade, Whitehall Gardens,
12 October 1874.

Sir,

I AM directed by the Board of Trade to inform you that it is in contemplation to present to Parliament early in the next Session returns in respect of the several training ships established in the United Kingdom for the purpose of training boys for the sea service, showing in the case of each ship the particuiars indicated in the annexed two lists; I am therefore to request that you will be so good as to cause the Board to be furnished with this information for the training ship under your command, made up to the 1st September ultimo.

Square-rigged tender.

It has appeared to the Board of Trade that the education on board a training ship, although a good education, to a certain extent is not a complete one for the sea service, and the Department would therefore be obliged if the Committee of your ship would inform them whether, in their opinion, this education cannot be made more complete by attaching to each ship a square-rigged tender; or otherwise, and if so, how.

Number of apprentices.

The department would also wish to be informed what number of boys out of your ship were sent to sea as apprentices during the last 12 months, and during the same time what number were sent to sea in other capacities, and what those other capacities have been.

Terms of indentures.

They would also wish to be informed (by memorandum outside the formal lists) of the length and pecuniary terms of the indentures of apprenticeship, and the wages of boys sent to sea in other capacities from your ship; and, further, whether in the case of boys who have in the past been sent to sea indentured apprentices, they have as a rule served out their indentures;

Conduct of boys.

and in the case of boys who have been sent to sea in other capacities, whether the Committee have on the whole received favourable accounts of them.

I am, &c.
(signed) *Thomas Gray.*

TRAINING SHIPS FOR OFFICERS.

The Captain Superintendent to the "Conway" to the Board of Trade.

School Frigate, "Conway," Liverpool,
28 November 1874.

Sir,

"Conway."

IN reply to your letter (M. 13,781) asking for information for the Board of Trade, I have to state that it occurred to me that the information required was not applicable to the class of boys educated in this ship. I therefore referred

the subject to the "Conway" Committee, who requested me to state that they trust the particulars relative to the "Conway" may not be printed on the same form as that for industrial, reformatory, and other class of vessels, as so doing would in all probability lead the Members of Parliament (for whom the Return is intended) and others to consider the "Conway" of no higher status than the other ships.

Square-rigged tender.

The Committee also wish me to state that, while considering a square-rigged tender would at times be advantageous, still that there would be great difficulty in using one at Liverpool, and that the expense would be much too great for them to think of keeping one.

As apprentices.

Forty-six pupils left the ship during the last 12 months as apprentices to become officers.

As midshipmen.

And six left to become midshipmen in Messrs. Green's and other employs.

Length of apprenticeship.

The apprentices have to serve from three or four years, during which time they receive from 30*l.* to 40*l.*

Pay.

Those as midshipmen receive nothing, paying premiums instead, from 150*l.* to 50*l.*

Conduct of old pupils.

As a rule, the Committee have received very favourable reports of the "Conway" pupils, several of whom are now in command of large merchant vessels.

I am, &c.
(signed) *Edward B. H. Franklin,*
Captain R. N. (retired),
Commanding School Frigate "Conway."

The Assistant Secretary,
Marine Department, Board of Trade.

The Secretary to the "Worcester" to Board of Trade.

59, Fenchurch-street, London, E.C.,
26 November 1874.

Sir,

"Worcester."

In reply to your favour of the 12th ultimo,—

Two Enclosures.

I have pleasure in enclosing the two lists forwarded to me filled up, giving the information asked for.

I imagine the question "If the education cannot be made more complete by attaching a square-rigged tender," does not apply to the "Worcester," where the time of the cadets is fully occupied in learning the theory which can only with advantage be put into practice when they leave the "Worcester."

I am, &c.
Thomas Gray, Esq. (signed) *W. M. Bullivant.*

TRAINING SHIPS FOR SEAMEN.

The Secretary to the "Akbar" to the Board of Trade.

Liverpool Juvenile Reformatory Association,
30, Castle-street, Liverpool,
31 October 1874.

Sir,

"Akbar."

I beg to enclose you the two papers, duly filled up, as requested in your favour of 12th instant.

Two Enclosures.

Square-rigged tender.

With regard to having a tender attached to the ship, several difficulties present themselves as regards the position of the ship and the circumstances of the boys as held under warrant of the Home Office.

If

If the tender had proper officers, and the Home Office assented, no doubt considerable advantage would result from an occasional cruise out to sea, but this from Liverpool would involve absence from the ship for a longer term than could be permitted under present arrangements; and as the Committee have no funds applicable for the purpose, and do not see their way to raising such funds from public subscriptions, the Government would have to be at the expense of the tender and of the crew, which would be necessary to accompany and to secure the safe custody of the boys. No such crew could be supplied from the present staff of officers, and it is obvious that the boys could not be sent away alone.

No apprentices.

The particulars of wages received are endorsed on the back of the memorandum, as requested.

Conduct of boys.

With regard to the conduct of the boys after being sent to sea, we subjoin a copy of the last Report sent to the Home Office, from which you will see that out of 100 74 are known as doing well; to this we believe Mr. Turner usually adds half the unknown, which raises the per-centage, say, well to 79 per cent.

CONDUCT of Boys discharged in the Years 1870, 1871, and 1872, so far as ascertained, to 31st December 1873.

[Deaths on Board, Licenses, and Transfers excluded.]

DISCHARGES.		CONDUCT.				
		Since Dead.	Doing Well.	Bad and Doubtful.	Convicted of Crime.	Unknown.
To Sea - - -	92	5	77	1	3	6
To Friends, &c. - -	39	3	21	- -	10	5
Absconded - - -	6	- -	5	- -	1	—
Penal Servitude - -	1	- -	- -	- -	1	—
TOTAL - - -	138	8	103	1	15	11

I am, &c.

Thomas Gray, Esq., (signed) *Thomas K. Twist*,
Board of Trade, Whitehall Gardens, Honorary Secretary.
London.

MEMORANDUM by Secretary of the "Chichester." "Chichester."

Square-rigged tender wanted.

TWENTY-TWO boys joined the Royal Navy during the year ended 1st September 1874. Total, 251 sent to sea in the above period. Not more than a fourth serve out their apprenticeship. The Committee have every reason to be satisfied with the result of their operations and the favourable accounts received of their boys. The Committee applied two or three months ago to the Admiralty for Her Majesty's Ship "Bee," to be used as a tender, but it was refused. They think that a brigantine rig would be found more useful, combining as it does the square and fore and aft rig.

12 November 1874.

The Secretary to the "Clarence" to the Board of Trade.

20, The Temple, Dale-street, Liverpool,
15 October 1874.

"Clarence."

Sir,

Two Enclosures.

I BEG to hand you herewith the two returns which you requested in your communication of 12th instant.

Square-rigged tender not required.

It is not considered by the Committee of the Catholic Reformatory Association that a tender to the "Clarence" is called for or is desirable. The education and training which the boys of the "Clarence" now receive, are quite sufficient to enable them to obtain good employment; and the ship is in the first place a reformatory school.

No apprentices.

No boys from the "Clarence" are ever apprenticed when sent to sea. It is very doutful if boys of this class would serve out their indentures.

Conduct of boys.

The accounts of boys sent to sea are considered very favourable.

I am, &c.
(signed) *Richard Yates*,
Honorary Secretary.

The Assistant Secretary,
Marine Department, Board of Trade,
Whitehall Gardens, London, S.W.

The Captain Superintendent of the "Cornwall" to the Board of Trade.

Steamship "Cornwall," Purfleet, Essex,
9 November 1874.

"Cornwall."

Sir,

Two Enclosures.

I HAVE the honour to enclose herewith two returns duly filled up relative to the ship under my superintendence.

Square-rigged tender unavailable. No apprentices.

With regard to this ship (a reformatory one) where the lads must be kept in charge, a tender would not be available.

It is not the usual practice to apprentice the boys. They are shipped as ordinary seamen, when competent, and not generally as boys the first voyage, and in nearly all cases the results have been satisfactory.

I have, &c.
(signed) *Arthur Morrell*,
Captain, R.N.

The Assistant Secretary,
Marine Department, Board of Trade.

The Secretary to the "Cumberland" to the Board of Trade.

County Buildings, Glasgow,
28 October 1874.

"Cumberland."

Sir,

Three Enclosures.

I SEND herewith the two lists filled up, with memorandum attached, in reference to the subject of your letter of 12th current, which I trust will be found satisfactory.

I am &c.
(signed) *R. D. Douglas*.

The Assistant Secretary,
Marine Department, Board of Trade,
London.

MEMORANDUM in reference to Circular of Board of Trade, 12 October 1874, regarding Training Ships, by Executive Committee of Clyde Training Ship "Cumberland."

Education.

CONSIDERING the various stages of ignorance of boys on joining the "Cumberland," and the short average period of detention on board, with the limited means at command, it is impossible to impart to all an advanced education, and at the same time make them proficients in seamanship. All that can be achieved in the former is simply to bring the pupils on to a fair condition in reading, writing, and arithmetic, with the elements of geography, so far as boys can comprehend. In this department the "Cumberland" has been reasonably successful, as has been certified by the several official reports of the Inspector of Industrial Schools.

As

As regards the progress of the boys in seamanship, everything has been done that could have been inspected in the "Cumberland," and so far it is considered the institution has been successful. In the seamanship classes are taught—the names, uses, and purposes of all the parts of a merchant ship, knotting, splicing, rigging, &c., the compass, the rule of the road, &c., the lead, rowing, and the management of boats, reefing, &c., and steering; and the pupils conclude with a course of instruction on board of the tender "Racer," a cutter of about 70 tons. All these different branches are taught by experienced officers. It is only after examination into their proficiency and when the Captain Superintendent is satisfied boys have attained to a certain standard in seamanship that they are drafted for employment.

Seamanship.

Fore and aft tender attached to ship.

The small tender attached to the "Cumberland" has hitherto answered well, but it cannot be pretended that a course of instruction in her can be of the nature or importance of that available in a large sea-going square rigged vessel.

Establishment of a square-rigged tender of immense advantage.

A square-rigged tender such as that suggested by the Board of Trade, and capable of accommodating a hundred boys, would doubtless be of immense advantage to the institution. It would more thoroughly complete, which cannot at present be done, the course of instruction in seamanship, and render boys really of practical use and value on joining any ship they may be drafted to.

But while appreciating to the fullest degree the advantages of having such a tender, and even admitting the necessity for having it, there are very serious obstacles or difficulties, presently existing, in the way of establishing and maintaining efficiently an addition of the kind to the training ship.

Serious obstacles existing.

In the first place there is the matter of additional expense. If a vessel, say of 200 to 300 tons, were granted by Government, it would cost probably about 1,500 *l.* at the lowest estimate to fit her out with all requisites for sea. It would involve the employment of a certificated master mariner, and a staff at the very least of four officers, to be permanently in charge. The salaries of these parties might amount to 500 *l.*, and the annual cost of repairs, new gear, sails, insurance, &c., &c., would not fall short of 500 *l.*, making the probable annual cost of keeping the tender in working condition at least 1,000 *l.* Now that sum in addition to the annual contributions required for the "Cumberland" could not be procured from voluntary aid out of the district, and on the ground of the cost alone, unless Government were to make the necessary pecuniary grant to cover the above, such a tender could not possibly be established and maintained by the executive Committee of the "Cumberland." The matter has been carefully and frequently considered by the Committee upon the suggestion made to them by Mr. Secretary Gray, of the Board of Trade, shortly after the "Cumberland" was established, and they regret to confess the hopelessness of their attempting to raise all the funds required for the purpose.

1. Cost of fitting out and maintenance.

In the second place, another difficulty arises. When a boy attains the age of 16 years the Government allowance according to the statute ceases; and when a boy reaches 15 years of age, and has been four years in the ship, the allowance is reduced to the one-half. This latter rule, however, is entirely an act of the Home Office, and is arbitrary, and might be rescinded. Now if the tender as suggested were to have a constant kept-up crew of selected and senior boys, after completion of the seamanship curriculum on board of the "Cumberland," it is not improbable the greater part of the crew would at the time of entering the tender, or during their training there, arrive at 16 years of age, and others might be on the half-allowance class. In these circumstances, as the law and the Government rules now stand, there would be every likelihood of the greater part of the cost of food and clothing of boys on board of the tender falling to be provided for otherwise than through Government aid. This is a most formidable difficulty to the establishment of a tender of the kind suggested; and it is impossible to be got over otherwise than by legislation to the effect of amending the existing Act to meet the foregoing probabilities.

2. Legislative enactments.

I have, &c.
(signed) *R. D. Douglas*,
Secretary for "Cumberland."

Glasgow, 28 October 1874.

The Superintendent, Middlesex Industrial School, to Board of Trade.

Middlesex Industrial School, Feltham, Hounslow,
21 October 1874.

Sir,

"Endeavour." I AM directed by the Committee of visitors of this institution to thank you for your communication of the 12th instant, and to return you the two lists enclosed filled in as desired.

Two Enclosures.

Square-rigged tender not required on account of situation of school. The Committee of visitors are of opinion that a square-rigged tender would no doubt tend to render the nautical training more complete, but regret that, owing to the circumstances and situation of this school, they are unable to entertain the proposition of providing one at present.

Number of apprentices and others. During the past 12 months four boys have been sent to sea from this school as apprentices, and 91 in other capacities, as follows:—

Ordinary seamen	30
Boys	56
Engine drivers (donkey engines)	2
Bakers	2
Officers' servant	1
	91

In addition to the above numbers 23 boys have entered the Royal Navy as band-boys in the same period.

Terms of indentures. The terms of the indentures of apprenticeship are, as a rule, for four years, with 40 *l.* for that period. Our apprenticeships have been few (chiefly orphan lads), but as a rule they serve out their indentures.

Enclosures. The Committee beg to enclose a nominal list of the boys shipped during the 12 months referred to in the return, which they trust you will consider to be of a satisfactory character.

Enclosures. The Committee also beg to enclose a return showing (as far as known) the present occupations of the 642 boys placed in the merchant service from the school since July 1866 (when they first began to train boys for the sea), which the Committee hope will justify their statement that on the whole very favourable accounts have been received of these boys.

I have, &c.
(signed) *J. Rowland Burkes*,
Superintendent.

Thomas Gray, Esq.,
Assistant Secretary, Board of Trade.

The Secretary to the "Formidable" to Board of Trade.

Liverpool Chambers, Corn-street, Bristol,
20 October 1874.

Sir,

"Formidable." I HAVE filled in the two lists.

Two Enclosures. If we may expect a grant, to be solely used for purchase of a tender, may I ask for a reply by return, and about the amount, for it will greatly influence us in the purchase, for material help will enable us to purchase a much better craft, and we may buy any day.

Yours, &c.
(signed) *A. F. Woodward*,
Honorary Secretary.

Thomas Gray, Esq.

MEMORANDUM enclosed in preceding letter.

OUR Committee are now on the look out for a suitable vessel, and it is their intention, if money is forthcoming, to have her ready for sea early in next year. Nearly 800 *l.* has been subscribed in Bristol, but some 400 *l*, or 500 *l.* more will be wanted for purchase, fittings, &c. May we expect any donation from the Board of Trade for such a purpose, for we hardly see our way clear without such help. Square-rigged tender about to be provided.

The Secretary to the "Gibraltar" to the Board of Trade.

"Gibraltar" Training Ship,
Office, 53, Waring-street, Belfast,
22 October 1874.

Sir,

I HAVE to acknowledge receipt of your letter (M.13,781), dated 12th October 1874, and accompanying forms, which are herewith returned filled up as correctly as they can be. "Gibraltar." Two Enclosures.

These returns may possibly compare unfavourably with those of other ships, but as our first start was made in June 1872, we are only now beginning to discharge boys, and the real working of the ship may be said to be only now commencing. Up to the present time it has been nearly all labour and expense. Commencement of work.

I would also point out that although the age given for receiving boys is put down from 10 to 14, we have had many sent to us much younger, who although fit objects for an industrial school, were altogether unfit for life on board ship. Ages below 10.

With respect to a small tender for teaching practical seamanship, I consider it most important, and a training ship can hardly be complete without such vessel. Square-rigged tender much to be desired.

The Committee have always looked forward to the time when they may be able to make this important addition, but the expense would be considerable, and we are not at present prepared to provide a tender. Money difficulties.

As probably many of the Committees, although willing, may not be able to start a tender, the idea occurs whether the Government should not supply two or three small vessels suitable for the purpose, and send them round to the various ports during the summer months picking up boys from different ships, in the same way as the district coast-guard ships do. Government should supply two or three tenders.

Either in this way assist the local committee or the State to take over the entire control of the training ships, seeing that it already contributes about two-thirds of the annual expense. State control.

Boys should be allowed to go to sea in training brigs at the age of (say 14) for two seasons; then at 16 be drafted into sea-going ships, and regularly bound, and at 19 they would be well trained and valuable young men for the Royal Naval Reserve.

It will be borne in mind that hitherto these training ships have been established principally with a view to reclaiming poor and destitute children, and educating and giving them a fair start in life; and although experience proves that the great majority of these boys do go to sea from choice, still it is not compulsory, and these institutions as at present managed may rather be looked upon as "Floating Industrial Schools" than training ships proper, established as a nursery for the future seamen of the Royal Navy or Mercantile Marine. Now, however, that the absolute necessity of having trained men for Mercantile Marine is becoming every day more apparent, and this important subject being taken up as a national one, the whole case is much altered, and the problem is how to make these valuable institutions of real service to the Mercantile Marine, and so to the State. We think that all classes maintained and educated (either altogether or partially) should be compelled to serve the country in some shape, and give some return for the outlay. Object of training ships in the past, and in the future.

If these ships are intended to be nurseries for the Royal Navy and Mercantile Marine, it appears to this Committee that the Admiralty and the Mercantile Marine should Admiralty and Mercantile Marine should contribute to their support.

should contribute largely to their support, and begin by freeing many of the ships from a heavy debt to the Admiralty for half-worn stores, &c., which materially cripples their usefulness.

I have, &c.
(signed) *J. T. Binland*, Hon. Sec.,
"Gibraltar" Training Ship.

The Assistant Secretary,
Marine Department, Board of Trade,
Whitehall Gardens, London, S.W.

The Captain Superintendent of the "Goliath" to the Board of Trade.

Forest Gate School District,
Training Ship "Goliath," Grays, Essex,
15 October 1874.

"Goliath."

Two Enclosures.

Sir,

In returning the enclosed forms filled up for the Board of Trade in accordance with your letter marked (M. 13,781), dated 12th instant, I have to inform you that the "Goliath" has had a tender (a brigantine of 97 tons register) attached to her since February 1872, in which a crew composed of one master, one mate, and 20 boys are sent down the river beyond the Nore for the purpose of training the boys in practical seamanship, and I am of opinion from the experience I have had that it would greatly conduce to the end in view, viz., making sailors of these boys if there were more brigantines attached to this training ship.

Has a brigantine attached.

Boys should be apprenticed to training ships and then transferred to merchant service.

It also appears to me that it would be a great advantage if boys could be always apprenticed to the Captain Superintendent of the training ship for a term of years, and that after serving a certain time, or, up to a certain age, the indentures should be transferred to the master of the merchant ship in which the boy went to sea. Two years served in a training ship to count as one year at sea.

Number of apprentices.

It will be seen by the return that 76 boys were sent to sea as apprentices during the twelvemonth ending 1st September 1874, and that 80 boys have been sent to sea in other capacities, being principally boys at monthly wages ranging between 10 *s.* and 50 *s.* per month; some have gone as under stewards, pantry boys, cook boys, and cabin servants, &c., for which specialities a few boys are trained on board the "Goliath," the greater number as sailor boys by the month.

Terms of indentures.

The terms of their indentures vary from 30 *l.* to 45 *l.* for four years, some with promise of gratuities when their time has been served. I believe that about one-third of the boys sent to sea as apprentices fail to serve their full time. These run away, being tempted by the prospect of ordinary seamen's wages of from 2 *l.* to 3 *l.* 10 *s.* per month.

Conduct of boys.

Is the only ship for paupers.

As a rule I have favourable accounts of the boys sent to sea; they nearly always visit the "Goliath" on their return to England, and the exceptions are by no means numerous. It should be remembered that the "Goliath" is neither a reformatory for criminals, nor does she come under the Industrial School Act, but is the only ship in the kingdom established for pauper boys. In conclusion I may add that there can be no doubt but that she could be easily filled up over and over again, if some assistance could be given so as to reduce the sums charged to the guardians for the maintenance and education of the boys admitted from the metropolitan and county unions and workhouse schools.

I am, &c.
(signed) *W. S. Bourchier*,
Captain Superintendent.

Thomas Gray Esq.,
Assistant Secretary, Marine Department,
Board of Trade.

The Secretary to the "Havannah" to the Board of Trade.

Her Majesty's Ship "Havannah,"
Certified Industrial and Ragged Schools,
Grange-road, Cardiff, Llandaff, "Havannah."
23 October 1874.

Sir,

I HAVE the honour to enclose you formal replies (as far as they can be furnished) to your inquiries of 12th instant (M. 13,781). Two Enclosures.

I have not had an opportunity of taking the opinion of our Committee collectively on the special question you ask, but from the views that some of them have expressed at our Chamber of Commerce and elsewhere, I may say that they are favourable to the project of a sailing tender being attached to the "Havannah" or to her and other similar hulks in this channel. Square-rigged tender desirable,

While a square-rigged tender would serve to teach more than one with fore and aft rig, I think a sloop would teach as much as is wanted before apprenticeship, and being cheaper could be more extensively adopted. but a sloop would be sufficient.

Personally I do not think that the training needs to be "complete" before apprenticeship. I think the old custom of forbidding apprentices to practice steering in their early years of service was a wise check to desertion. I think that if a boy has little or nothing left to be learned when he joins a ship he will chafe under the restraint of his indenture. Apprentices.

I have, &c.
(signed) *Jonas Watson*, Hon. Sec.

To the Assisiant Secretary,
Marine Department, Board of Trade,
Whitehall Gardens, S.W.

The Secretary to the "Indefatigable" to the Board of Trade.

Liverpool, Training Ship "Indefatigable," "Indefatigable."
Liverpool, 22 October 1874.

Sir,

I BEG to hand you enclosed the documents with particulars regarding the ship "Indefatigable," as desired in your circular note of the 12th instant. Two Enclosures.

For some time past it has been felt by the Committee that in order to render the practical training of the boys more efficient it would be most desirable to have a square-rigged tender attached to the vessel, and it has been in contemplation to procure one, but the expense of doing so has been an obstacle. Square-rigged tender most desirable.

It will be observed that the number of boys sent to sea as indentured apprentices has been small in comparison with the number sent in other capacities. Apprentices and other boys.

While most of the boys not apprenticed have done well, complaints have several times been received of boys breaking their indentures. Their conduct.

As long as the question of taking apprentices or not remains an open one the Committee are of opinion that this will be a great difficulty with the managers of training ships.

Take, for example, the case of two boys trained on board the "Indefatigable," both at the time of leaving the vessel being equally well qualified. The one is bound to a shipowner for four years, for which period of service he receives 35*l.*, the other enters the service of a shipowner who declines to take apprentices, and receives 25*s.* or 30*s.* a month for his first voyage. He arrives at home, and is free; on his second voyage he ships as an ordinary, and perhaps gets 2*l.* or 2*l.* 10*s.* a month. Inequality in their wages,

He meets the apprentice in a foreign port, who is still receiving perhaps 6*l.* or 10*l.* a year. The apprentice, being no doubt equal to his companion in attainments, thinks his case a very hard one, and runs away from his ship in order that he may obtain similar wages. This has happened several times in the experience of the Committee, and it is a state of things for which under existing circumstances it is difficult to find a remedy. which causes desertion.

While anxious to apprentice as many of the boys as possible, believing that where they serve out their time with a good firm it will ultimately be to their advantage, the difficulty above stated stands greatly in their way.

I am, &c.

To the Assistant Secretary, (signed) *Chas. J. Bushell*, Hon. Sec.
Marine Department.

The Secretary to the "Mars" to the Board of Trade.

"Mars" Training Ship,
Mercantile Marine Office, Dundee,
7 November 1874.

Sir,

"Mars." I HAVE the honour to acknowledge the receipt of your letter of the 12th ultimo on the subject of training ships, and requesting the information therein specified in respect of this institution, and I am herewith to enclose the forms you supplied for that purpose duly filled up.

Two Enclosures.

Terms of indentures. With reference to that part of your letter which requests that certain particulars be supplied on a separate paper, I have to state in the first place that the terms obtained for boys apprenticed to the sea service *ex* the "Mars" are from 35 *l.* to 40 *l.* for three years, a complete outfit being supplied by the institution. These terms are considerably more liberal than are given by shipowners here to ordinary apprentices from the shore, the usual terms for such being 26 *l.* for four years.

Wages of other boys, The number of apprentices from the "Mars" are few, as almost all the boys are sent out as "boys" or as ordinary seamen. The wages to these boys run from 25 *s.* to 35 *s.* per month, few of them being shipped under 30 *s.* They are, of course, engaged only for the voyage, but we never allow them to go on a short voyage to begin with if it can be helped.

and their conduct. As to the conduct of the boys who have hitherto been discharged from the "Mars," it has been satisfactory to a degree far beyond our expectations. This is all the more pleasing from the fact that the great proportion of them have been rescued from the lowest strata where nothing but evil example and the worst influences abound; yet out of these contaminations surprising reformations have been effected. By way of illustration, it may be mentioned that it is no unusual thing for a boy to beg the Captain Superintendent not to allow a worthless relative, sometimes a mother, on board the ship lest he should be drawn back into his former ways. This proves conclusively that such boys are sensible of the good they are deriving on board the ship.

We have not yet had sufficient experience to speak of apprentices, but in the case of other boys, every one of them so far as we have ascertained has been discharged with character marked V.G. It has been reported that two or three have left their vessels abroad, but the particulars we have not yet learned. It is only to be expected, however, that such will occasionally happen after we have done our best.

Last year two boys were sent to Messrs. Currie & Co., of London. They made the round of a long voyage and returned to Dundee. They satisfied the master so well that he wrote to his agent here to secure them for his next voyage, but they had shipped in the interim at 2 *l.* 10 *s.* per month.

We keep as complete a record as possible of the movements of boys after their discharge, for the satisfaction of the managers of the institution and for the information of the Home Department, and my official position here enables me to do this to a considerable extent, as well as to get employment for them. One of our chief efforts is to give them a fair chance of doing well at the outset, and this is attained by getting them away in good vessels.

Education. As to the education of the boys, no pains are spared to make them fair scholars, in order that they may bring a degree of intelligence to bear on their employments, and the school progress in the great majority of instances is highly satisfactory. Along with this they obtain a knowledge of seamanship, theoretically, on board, and practically in our superior sea-going tender. Among other cruises they

they were round the north of Scotland this past summer, and had some heavy weather in which they behaved very heroically, and the other day Captain Scott informed me that he had just had them out in a stiff breeze, when they furled sail to his entire satisfaction.

Yours, &c.

The Assistant Secretary, Marine Department. (signed) *G. Jack*, Secretary to "Mars."

The Secretary to the "Southampton" to the Board of Trade.

Hull Industrial Schools,
Amalgamated with the
Humber Industrial School Ship, "Southampton."
Marlborough Terrace, 21 October 1874.

Sir,

"Southampton."

In reply to your letter of the 12th instant, I have the honour to inform you that the Committee of the Industrial School Ship "Southampton," consider that a sailing tender is very desirable, but that they have not the means of supporting one.

Square-rigged tender very desirable, but have no means to support one.

At present boys are licensed when 14 or 15 years of age to coasting vessels belonging to this port and Goole, which they cannot leave except to return to the "Southampton," and as they only receive a small portion of their wages, about 5 *s.* a month, a fund is formed to pay for their recovery in cases of desertion. This arrangement also allows a larger number of boys to be received annually, as when a boy is on license, another can be received in his place.

Boys licensed to coasting vessels.

The answers of the remaining questions in your letter are endorsed on the returns.

Two Enclosures.

I am, &c.

The Assistant Secretary, Marine Department, Board of Trade, Whitehall Gardens, S.W. (signed) *F. Heaton Haller*, Secretary.

The Secretary to the "Warspite" to the Board of Trade.

Marine Society's Office,
54½, Bishopsgate-street Within, E.C.,
23 October 1874.

Sir,

"Warspite."

In compliance with the request contained in your letter of the 12th instant (M. 13,781), I am directed by the Committee of the Marine Society to enclose two returns, which supply all the information asked for respecting the "Warspite" training ship.

Two Enclosures.

With reference to the desirability of attaching a square-rigged tender, the "Warspite" lies so high up the river, making the risk of collision and other attendant inconveniences so great, that the Committee (even putting out of consideration the great expense) do not under existing circumstances think such a step advisable. The "Warspite" *had* a tender some years back, but her use had to be given up.

Situation of ship renders square-rigged tender undesirable.

I am, &c.

The Assistant Secretary, Marine Department, Board of Trade. (signed) *S. W. Sadler*, (Paymaster in Chief, R.N.), Secretary.

The Vice Chairman of the Committee of the "Wellesley" to the Board of Trade.

"Wellesley" Training Ship Office,
38, Side, Newcastle-upon-Tyne, 24 October 1874.

Sir,

"Wellesley."

I beg to acknowledge receipt of your circular letter of the 12th instant, and herewith enclose the returns filled up. In doing so I would venture to point out that these returns are not calculated to convey a correct notion of what these

Two Enclosures.

ships are destined to do in supplying our Mercantile Marine with boys for such service.

Number of boys.

The ship has now on board 278 boys, which is 22 short of the number limited by Government to be received. The Committee have for economical reasons been obliged to receive boys of all ages up to 14, and when the full complement of 300 has been made up, they then hope to be in a position to receive only such boys of a healthy constitution, and who have attained the age of 12 and upwards.

Government aid required.

The Committee feel that the best interests of the nation would be served by the Government supplementing the allowance authorised to be made by boards of guardians, so that boys from our inland workhouses could be received on board on the same terms as those ordered under the Act by magistrates. They feel that they can entertain no hope of our industrial schools established on shore co-operating with training ships, as they find that from experience the committees of such shore institutions prefer taking the credit of placing their boys to shore pursuits.

The Committee believe that at least 80 or 90 per cent. of the boys received on board would go to sea, and that by giving each boy 18 months or two years practical training on board they would be able to pass annually at least 100 boys through the ship for sea service.

One or more square-rigged brigs should be sent round the coast by Government.

The Committee highly approve of sending the boys for one or two months cruise at sea, but in their case they cannot undertake it for want of funds, and they further feel that this service would be more efficiently performed by the Government undertaking to do it with one or more smart brigs calling round our coast, and taking from the different ships such boys whose term was about to expire on board. Such an arrangement would not only be more efficient, but more economical than each training ship employing a small vessel of its own, while at the same time it would be an incentive to many boys to go to sea who might otherwise adopt land service.

No apprentices.

Wages of other boys.

The Committee found after a short experience that it was not desirable to bind the boys as apprentices, for with one or two exceptions the boys deserted, as they found they could command after a few months at sea, from the practical training they had received while on board the training ship, the wages paid to ordinary seamen, and in some cases to able seamen.

The wage now paid for our boys is 30*s.* per month, and as a rule they conduct themselves satisfactorily to their employers.

I am, &c.

The Assistant Secretary,
Marine Department, Board of Trade,
Whitehall Gardens, S.W.

(signed) *James Hall*,
Vice Chairman.

TRAINING SHIPS FOR OFFICERS

STATEMENT showing the Number of BOYS sent into the MERCHANT SERVICE as APPRENTICES, &c., and also the Place where Established, Accommodation, Class, Staff, and Working Expenses of the several Vessels between 1st September 1873 and 31st August 1874.

NAME OF SHIP.	Place where Established.	Number of Boys in Ships on 1st September 1874.	For how many the Ship is intended.	Number of Boys sent into the Merchant Service during 12 Months ended 1st September 1874.		Expenses on Board per Head per Annum, as far as known.	Staff employed in Management.	Total Annual Outlay.	Amount received during the Year from Public Vote.	Amount received during the Year from Private Subscription, Bequests, &c.
				As Apprentices.	On other Capacities.					
CONWAY	Liverpool	103	140	Not as seamen apprentices, but for officers, 46.*	As midshipmen, 6	£. s. d. 50 10 – Pupils' fees, 50 guineas a year, = £. 52 10	20	£. s. d. 5,755 – –	None	£. s. d. †127 – –
WORCESTER	London	140	140	59	One. Withdrawn from ship 11.	£. 57 – – (including uniform, and all expenses of staff, &c.) Fees now charged, 55 guineas, = £. 57 15‡	25	8,000 – –	None	None.

* CONWAY.—The pupils being gentlemen's sons only, serve an apprenticeship to become officers.

† „ The subscriptions are received to enable members to vote in Committee, and are used to educate two or three free boys, sons of merchant captains, deceased.

‡ WORCESTER.—Amount received from boys for fees, 7,953 *l.* 17 *s.*

TRAINING SHIP

STATEMENT showing the Number of BOYS sent into the MERCHANT SERVICE as APPRENTICES, &c.; a between 1st September 18

NAME OF SHIP.	Place where Established.	No. of Boys in Ships on 1st Sept. 1874.	For how many the Ship is intended.	Nature of Ship, according to Class of Boys Educated.			Number of Boys sent into Merchant Service during 12 Months ende 1st September 1874.	
				Reformatory for Criminals.	Industrial School.	Labouring Classes generally.	As Apprentices.	In oth Capaci
AKBAR	River Mersey, near Rock Ferry, Birkenhead.	170	200	Reformatory for criminals. No boys received now except under sentence of magistrate.			None — All boys being under detention, are sent to sea on license according to the Reformatory Act.	28
CLARENCE*	River Mersey	229	250	Reformatory			None	57
CHICHESTER	Greenhithe	250	200			Labouring Classes.	15	O. S. Boys
CORNWALL	Purfleet, Essex	238	250	Reformatory			Nil	83
CUMBERLAND‡	Row Bay, Gareloch, Dumbartonshire, N.B.	349	360 The number is limited to this by the Secretary of State. The ship, however, could easily accommodate 500 boys with a small addition to existing staff.		The ship is certified by the Secretary of State as an Industrial School Ship under the Industrial School Act, 1866.		35	91
ENDEAVOUR	Land Training Brig, Middlesex Industrial School, Feltham, near Hounslow.	149	150		Certified Industrial School.		4	91

‡ CUMBERLAND.—The Committee of the "Cumberland" have, on the whole, had favourable accounts of the boys who have been sent to sea. A few of th sent as apprentices have absconded abroad, but not in any greater proportion than amongst boys of other and the better classes. The boys sent as ordinary sean with few exceptions, are doing well and earning fair wages. The Committee are in communication with owners and masters of ships, and each boy is speci inquired after and reported on for a period of three years after being discharged from the "Cumberland." The Committee are of opinion that the pe of apprenticeship for boys educated in a training ship should be shortened to three years. A four years' apprenticeship, as now insisted on, makes a discontented with his indenture wages during the last year, and he is thus incited to desert, more especially if he be about 20 years of age.

FOR SEAMEN.

also the Place where Established, Accommodation, Class, Staff, and Working Expenses of the several Vessels, and 31st August 1874.

Expenses on Board per Head per Annum, as far as known.	Staff Employed in Management.	Total Annual Outlay.	Amount received during the Year from Public Vote.	Amount received during the Year from Private Subscription, Bequests, &c.	Terms of Indentures of Apprenticeship.	Wages per Month of other Boys sent to Sea.
20 *l.* 1 *s.*, or deducting industrial profit, 19 *l.* 13 *s.*	Captain Superintendent Chaplain. Schoolmaster. Assistant Schoolmaster. Carpenter. Cook. 6 Instructors.	Last year, 3,592 *l.* -	Treasury, 2,709 *l.* - Counties, 503 *l.* 3,212 *l.*	Private Subscriptions, 125 *l.*	No Apprentices -	Average, 30 *s.*
About 18 *l.* 10 *s.* -	Captain - - - Chief Officer. 10 other Officers.	About 3,875 *l.** -	3,362 *l.**	391 *l.**	No Apprentices.	
From 16 *l.* to 18 *l* a year.	Captain - - - Chief Officer. 4 Seamen Instructors. 1 Schoolmaster. 1 Assistant Schoolmaster. 1 Tailor. 1 Cook and Baker.	5,730 *l.* 9 *s.* 3 *d.*, including outfits for boys on joining ship and on going to sea, and expenses of shipping agents, &c.	Nothing - - -	4,537 *l.* 15 *s.* 3 *d.*	10 *l.* per annum; time varies according to age of boys. (1 *s.* per month for washing; few shillings pocket money.)	According to size, 10 *s* to 15 *s.*, first voyage.
23 *l.*† This is the average of the total expenditure, including repairs, salaries, insurance, taxes, &c.	Captain Superintendent 1 Chief Officer. 1 Chief Schoolmaster. 2 Assistant Schoolmasters. 1 Chief Carpenter. 1 Chief Seaman Instructor. 4 Seamen Instructors. 1 Carpenter. 1 Bandmaster. 1 Cook. 1 Agent in London.	*6,264 l.*†	*4,588 l.*† Counties or Boroughs, *1,699 l.*† 6,287 *l.*†	77 *l.*†	No Apprentices -	Average, 15 *s.* to 25 *s.*, first voyage.
£. *s.* *d.* Clothing - 3 8 - Food - - 7 4 - 10 12 - Salaries of Staff, repairs, and keeping up of ship's boats, &c. 9 15 10 Being Total per head - 20 7 10	Captain - - 1 Surgeon - - 1 Boatswain - - 1 Naval Instructor - 4 Carpenter - - 1 Blacksmith - - 1 Tailor - - - 1 Storekeeper and Bandmaster. 1 Schoolmasters - 3 (With 9 pupil readers selected from crew.) Inspector at Glasgow 1 Total - - 15 Besides Treasurer and Hon. Secretary.	£. *s.* *d. Ordinary 7,076 8 4 Extraordinary. 480 15 7 Total - 7,557 3 11	£. *s.* *d. From Treasury and Home Office. 5,559 15 6 From Rates at Glasgow. 736 6 7 6,296 2 1	623 *l.* 12 *s.* 2 *d.*	Average, 30 *l.* for four years. £. 1st year - 4 2nd „ - 6 3rd „ - 8 4th „ - 12 30	Average first voyage, 6 stewards and cooks at 45 *s.* 85. O. S. at 25 *s.*
23 *l.* 19 *s.* 6½ *d.* per head.	3 Nautical Instructors and 2 Schoolmasters for the Training Brig in particular, and in addition the General Administrative Staff of the Institution.	Proportion chargeable to nautical division, 3,596 *l.* 11 *s.* 3 *d.* (for maintenance and management.)	Proportion received on account of nautical division, 1,396 *l.* 5 *s.*	Nil - -	40 *l.* for 4 years -	Boys, 10 *s.* to 15 *s.* per month; O. S., 20 *s.* to 30 *s.*

* Clarence.—The receipts and outlay are those for the year 1873.

† Cornwall.—The figures in *italics* are the averages of the years 1871, 1872, and 1873.

STATEMENT showing the Number of Boys sent into the Merchant Service as Apprentices, &c., and also the Place where Established.

NAME OF SHIP.	Place where Established.	No. of Boys in Ships on 1st Sept. 1874.	For how many the Ship is intended.	Nature of Ship, according to Class of Boys Educated.			Number of Boys sent into the Merchant Service during 12 Months ended 1st September 1874.	
				Reformatory for Criminals.	Industrial School.	Labouring Classes generally.	As Apprentices.	In other Capacities.
FORMIDABLE -	Bristol - -	297	300 to 350 average, 325.	- - -	Industrial School*	- -	52†	3 as O.S.
GIBRALTAR - -	Belfast - -	214	350	- - -	Industrial School -	- -	3	8
GOLIATH § - -	Off Grays, Essex, River Thames.	399	500	- - -	- - -	For pauper boys.	76	80
HAVANNAH - -	Cardiff - -	84	100 Would probably be as many as it would be wise to admit, though a larger number might be provided for on board.	- - -	Industrial School -	- -	3	4
INDEFATIGABLE -	Mersey, Liverpool	149	250	- - -	- - -	For sons and orphans of sailors and other poor and destitute boys.	11	23
MARS ¶ - - -	River Tay, about 2 miles up from the Port of Dundee.	305	For 300, but occasionally there are a few more. Could easily accommodate 350 or more.	Nil - - -	Industrial School -	- -	10	53
SOUTHAMPTON -	Hull - - -	200	240	Nil - - -	Industrial School -	- -	2 Merchant Service (6 fishing).	13

* FORMIDABLE.—Parents character at a low ebb. Character best told by Sects. 14, 15, and 16 of Industrial Schools Act; Sect. 14 chiefly.

† ,, We feel sure that a good one-third of the apprentices have run, but they are still afloat as O. S., and, generally, are the smartest lads We have received, on the whole, *most favourable* accounts of lads left. The chief and almost only throwback is that of lads no serving out their indentures.

‡ ,, All nautical staff; have been in Royal Navy; schoolmasters certified.

§ GOLIATH.—Besides the boys sent to sea—

56 boys were drafted into the army, as musicians, between 1st September 1873 and above date.
34 boys were claimed by their friends between above dates.
4 boys sent to situations on shore between above dates.
11 boys were returned to their schools; and
3 boys died between above dates.

108
156 to sea.

264 Total discharged; and 302 boys were admitted between the above dates.

W. S. Bourchier, Captain Superintendent.

Accommodation Class, Staff, and Working Expenses of the several Vessels, between 1 Sept. 1873 and 31 Aug. 1874—*continued.*

Expenses on Board per Head per Annum, as far as known.	Staff Employed in Management.	Total Annual Outlay.	Amount received during the Year from Public Vote.	Amount received during the Year from Private Subscription, Bequests, &c.	Terms of Indentures of Apprenticeship.	Wages per Month of other Boys sent to Sea.
18 *l.* 8 *s.* 8 *d.* 1st July 1873 to 30 June 1874.	Captain Superintendent. 1 Officer. 4 Instructors. Carpenter. ‡ Cook. Tailor. Shoemaker. 3 Schoolmasters. Agent. Ship Secretary.	5,955 *l.* 1st July 1873 to 30th June 1874.	Home Office, 3,648 *l.* 6 *s.* 5 *d.* Local School Board. 9,950 *l.* 4 *s.* 10 *d.*	£.1,399.14.11.	35 *l.* for 3 years -	Boys and O. S., 25 *s.* to 35 *s.*
About 20 *l.*	13	- - -	1,820 *l.* 3 *s.* 7 *d.* Paymaster General. 910 *l.* Counties.	591 *l.* 8 *s.*	—	—
19 *l.* 6 *s.* 8 *d.*	22, including 2 officers in brigantine, and 2 officers in charge of hospital on shore.	7,733 *l.* 6 *s.* 8 *d.*	None; expenses paid out of poor rates for Forest Gate School District.	None.	30 *l.* to 45 *l.* for 4 years	10 *s.* to 50 *s.*
14 *l.* 9 *s.* 8 *d.*	Hon. Secretary - - Hon. Treasurer. Hon. Medical Officer. Superintendent. Boatswain, and Schoolmaster.	1,322 *l.* 6 *s.* 2 *d.*	Treasury, 976 *l.* 1 *s.* 3 *d.* School Boards, Justices and Guardians of the Poor, 130 *l.* 2 *s.* 1 *d.*	10 *l.* donation. 68 *l.* 16 *s.* 6 *d.* subscriptions. 217 *l.* 7 *s.* 3 *d.* earnings of industrial classes.	35 *l.* for 3 years -	Cabin Boys, 20 *s.*
About 20 *l.*‖	Captain - - - Chief Officer. Carpenter. Cook. 2 Schoolmasters. 4 Seamen Instructors.	Now about 4,000 *l.*	Nil - - - -	About 4,400 *l.*	35 *l.* for 4 years -	25 *s.* to 30 *s.*, 1st voyage. 40 *s.* to 50 *s.*, 2nd voyage.
19 *l.* 14 *s.*	Captain Superintendent 1 Carpenter. 1 Chief Officer. 1 Bandmaster. 1 Cook. 1 Tailor. 4 Instructors. 3 Schoolmasters. 1 Secretary and Treasurer.	1873: 5,915 *l.*	1873: Treasury, 4,658 *l.* County Prison Boards, 300 *l.*	859 *l.*	35 *l.* to 40 *l.* for 3 years	25 *s.* to 30 *s.*
16 *l.* 3 *s.* 9 *d.*	Captain Superintendent Chief Officer. Schoolmaster. Carpenter. Cook. 5 Instructors. Bandmaster. 2 Female Tailors. Shoemaker. Assistant Schoolmaster.	4,002 *l.* 3 *s.* 9 *d.*	3,915 *l.* 18 *s.* 10 *d.*	86 *l.* 4 *s.* 11 *d.*	40 *l.* for 4 years, and a bonus of 5 *l.* at expiration of term. **	17 *s.* 6 *d.* to 25 *s.* in sailing vessels; 30 *s.*, cabin and engineer servants in steamers. **

‖ Indefatigable.—The average cost per head is calculated over a period of about five years. Early in last year the vessel broke loose from her moorings, and was in dock for eight months. During this period no new boys were admitted, so that the numbers were considerably diminished, and the expenditure increased in consequence of repairs to the ship while in dock.

¶ Mars.—The number of boys, *ex* the "Mars," who actually go to sea, is much greater than is shown here; about three-fourths of those discharged to shore employments come back in order to get ships. We don't encourage apprenticeships for good boys, unless they are taken for a short period on liberal terms. They obtain good wages as ordinarys, in consequence of the practical seamanship they obtain in the "Mars" sea-going tender. The tender adds considerably to the expense.

G. J., Secretary to "Mars," 7 November 1874.

** Southampton.—The usual term of apprenticeship is for four years 40 *l.*, with a bonus of 5 *l.* at the expiration of the time; 45 *l.* for five years, with a similar bonus. There is one instance of 62 *l.* for five years, and one of 48 *l.* for four years.

The boys seldom remain above one year in their apprenticeship and then desert, the owners and masters taking no trouble to recover them. Apprenticing from an Industrial School creates a "final discharge." Boys take advantage of this, volunteer to be apprenticed, and in some instances abscond within 24 hours after being bound.

Boys not apprenticed receive from 17 *s.* 6 *d.* to 25 *s.* a month as working boys in sailing vessels, and usually 30 *s.* a month as cabin and engineer servants in steamers. The accounts received of boys so sent out are generally satisfactory.

STATEMENT showing the Number of Boys sent into the Merchant Service as Apprentices, &c., and also the Place where Established

NAME OF SHIP.	Place where Established.	No. of Boys in Ships on 1st Sept. 1874.	For how many the Ship is intended.	Name of Ship, according to Class of Boys Educated.			Number of Boys sent into the Merchant Service during 12 Months ended 1st September 1874.	
				Reformatory for Criminals.	Industrial School.	Labouring Classes generally.	As Apprentices.	In other Capacities
WARSPITE* - -	Woolwich - -	200	200	Nil - - -	- - -	Labouring Classes.	45	163
WELLESLEY -	River Tyne - -	278	300	- - -	Industrial School -	- -	None	28
	TOTAL - -	3,511	3,975	3	8	4	Total for 11 Ships 256	938

* WARSPITE.—One hundred and thirty-eight boys were sent into Royal Navy during this period.

Apprentices.				Boys sent to Sea, signing Articles.
1 boy	4 years	30 *l.*		2 at 30 *s.* per month.
6 boys	4 „	35 *l.*	Most of these apprentices were sent	70 „ 20 *s.* „
3 „	4 „	40 *l.*	to Swansea. The London firms	91 „ 15 *s.* „
15 „	4 „	45 *l.*	gave the smaller amounts.	
20 „	4 „	46 *l.*		163
45				

It

ANALYSIS of the above TABLES.

PARTICULARS given for the Year ending 31st August 1874.

From the above Tables, the Columns of which are not, however, complete in all cases, it would appear that at present the gross results attained by these 17 Training Ships, are as follows:—

TABLE I.

NUMBER of BOYS sent into the MERCHANT SERVICE by each Class of Ship, and Average Cost of each Boy.

CLASS OF SHIP.	Number of each.	Number of Boys sent into the Merchant Service.			Average Expense of each Boy on Board, per Head, per Annum.
		As Apprentices.	In other Capacities.	Total Number.	
					£. *s.* *d.*
For Officers - - - -	2	105†	7	112	53 15 -
Industrial Schools - - -	8	109	291	400	18 19 7½
Independent Ships - - -	4	147	479	626	21 6 2
Reformatories - - - -	3	Nil.‡	168	168	20 7 8
GRAND TOTAL, Number of Boys sent into the Merchant Service - - -				1,306	

† These are not seamen apprentices, but officers.
‡ All boys being under detention, are sent to sea on license, under the Reformatory Act.

Accommodation Class, Staff, and Working Expenses of the several Vessels, between 1 Sept. 1873 and 31 Aug. 1874—*continued*.

Expenses on Board per Head per Annum, as far as known.	Staff Employed in Management.	Total Annual Outlay.	Amount received during the Year from Public Vote.	Amount received during the Year from Private Subscription, Bequests, &c.	Terms of Indentures of Apprenticeship.	Wages per Month of other Boys sent to Sea.
In 1873, 23 *l.* 9 *s.*, and 5 *l.* 9 *s.* clothing, and sea outfit.	1 Superintendent 1 Chief Officer. 5 Instructors. 2 Carpenters. 1 Cook. 2 Schoolmasters.	In 1873, 6,721 *l.*	None	2,005 *l.*, including an unusual anonymous gift of 1,000 *l.* Annual subscriptions are very small.	30 *l.* to 46 *l.* for 4 years for 45 boys * Average = £. 43. 9. for 4 years.	15 *s.* to 30 *s.* *
Last year, 18 *l.* 13 *s.* 6 *d.*	Superintendent Chief Officer. 4 Sea Instructors. 3 Schoolmasters. 1 Tailor. 1 Bootmaker. 1 Steward. 1 Carpenter.	4,669 *l.* 0 *s.* 8 *d.*	Treasury £. 3,593 9 4 School Boards, 614 2 – Guardians of Poor - 16 2 – Voluntary Boys - 21 19 6 4,245 12 10 Total for 11 Ships.	544 *l.* 15 *s.* 4 *d.*	No apprentices now	O. S., engineers and stewards at 30 *s.*
298 4 7½	Total for 14 Ships, about	70,933 *l.* 1 *s.* 8 *d.*	51,107 *l.* 16 *s.* 11 *d.*	15,936 *l.* 14 *s.* 4 *d.*	Total for 13 Ships.	
	Annual Average	5,066 *l.* 12 *s.* 11¼ *d.*	4,646 *l.* 3 *s.* 4 *d.*	1,225 *l.* 18 *s.* 0 *d.*		

It was the exception for apprentices in the *coasting* trade to serve out their time, and the Committee in consequence now send no boys into coasters. Those now in foreign-going ships do much better, but it is a great temptation to an apprentice to run when he sees boys of the same age as himself getting, after one or two voyages, ordinary seamen's pay of 2 *l.* or 2 *l.* 10 *s.* a month. Boys prefer not being apprenticed, as a rule.

Very favourable accounts, on the whole, are received of the boys sent to sea on monthly wages; most of them have V. G. on their discharge certificates. When there is much desertion going on, as at present in New Zealand, the boys sometimes go with the seamen, and, like the seamen, engage eventually for the return voyage in another ship. There is also always a per-centage who, after one voyage, dislike the sea and return to former occupations on shore.

In consequence of the competition among the training ships in the Thames, it is necessary to employ an agent to solicit boys for the ships.

Analysis of the above Tables—(*continued*).

Table II.

Expenses of Maintenance.

Class of Ship.	Number of each.	Receipts. Public Vote.	Receipts. Private Subscriptions.	Receipts. Pupils' Fees.	Total Receipts.	Total Expenditure.
		£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
For Officers	2	– – –	127 – –	13,492 10 –	13,619 10 –	13,755 – –
Industrial Schools	8	38,246 16 11	4,400 19 1§	– – –	42,647 16 –	33,017 5 9‖
Independent Ships	4	– – –	10,942 15 3¶	– – –	10,942 15 3	24,184 15 11
Reformatories	3	12,861 – –	593 – –	– – –	13,454 – –	13,731 – –

§ This is the amount received by 7 ships.
¶ This is the amount received by 3 ships.
‖ This is the amount spent by 7 ships.

Table III.

Accommodation.

Class of Ship.	Number of each.	Number of Boys Ship is intended to Hold.	Number of Boys actually on Board.	Increased Number of Boys the Ship might Accommodate.
For Officers	2	280	243	37
Industrial Schools	8	2,125**	1,876	249
Independent Ships	4	1,150	998	152
Reformatories	3	700	637	63
Total extra Number the Ships might accommodate				501

** On referring to the remarks set against the "Cumberland," "Havannah," and "Mars," it will be seen that these ships might be made available for a further increased number.

MIDDLESEX INDUSTRIAL SCHOOL, FELTHAM.
THE "ENDEAVOUR."

RETURN of BOYS sent to SEA between 1st September 1873 and 31st August 1874 (both Days inclusive).

No.	Names.	If Indentured, the Term of Years.	Wages.	Capacity.	Ship.	Destination.
2157	G. Mackman		1 *l.* per month	Boy	Lella Alice	Prince Edward Island.
2188	B. Cole		1 *l.* „	O. S.	Glenhuntley	New Zealand.
2186	A. Huxley		15 *s.* „	O. S.	Clanranald	Melbourne.
2151	F. Cullen		1 *l.* „	O. S.	Primula	Africa.
2185	W. Stott		15 *s.* „	Boy	Swanby	West Indies.
2195	H. Pike		1 *l.* „	O. S.	Mysore	Calcutta.
2096	H. Elliott		15 *s.* „	Boy	Bertha	„
2127	B. Leonard	4 years	40 *l.* per annum	Apprentice	Carran	Rio de Janeiro.
2147	W. Chapman		15 *s.* per month	O. S.	Southern Bell	Queensland.
2167	J. McPherson		1 *l.* „	Boy	Derwent	Hong Kong.
2118	T. Conolly		1 *l.* „	Boy	Poonah	Brindisi.
2175	J. Waters		1 *l.* „	O. S.	Dunrobin Castle	New Orleans.
2177	H. Smith		1 *l.* „	Boy	Maliva	India and China.
2198	W. Cook		1 *l.* „	Boy	„	„
2194	H. Stanley		1 *l.* „	O. S.	Woodlark	New Zealand.
2145	C. Green		1 *l.* „	O. S.	Scimitar	„
2200	W. Darbin		15 *s.* „	Boy	Shannon	Mauritius.
2142	G. Guazzaroni		10 *s.* „	Boy	Welsh Girl	Grenada.
2217	W. Belcher		30 *s.* „	O. S.	Sestos	Black Sea.
2206	G. Chambers		15 *s.* „	Boy	City Camp	Cardiff and Callao.
2159	G. Goody		15 *s.* „	O. S.	Ballochmyle	New Zealand.
2196	R. Syrent	4 years	40 *l.* per annum	Apprentice	Jane Maria	Shields and France.
2214	S. Morgan		15 *s.* per month	Boy	Roslyn Castle	New Zealand.
2180	T. George		1 *l.* „	O. S.	Argra	Queensland.
2222	S. Plummer		15 *s.* „	Boy	Richard Wright	San Francisco.
2232	W. G. Marsden		10 *s.* „	Boy	Cornato	Adelaide.
2223	A. G. Green		25 *s.* „	O. S.	Dumphaile Castle	Madras.
2233	G. Ellis		25 *s.* „	O. S.	Warren Hastings	Mauritius.
2218	R. Day		25 *s.* „	Boy	Sestos	Black Sea.
2207	C. Harris		1 *l.* „	Engine driver	Edmund Kaye	Quebec.
2229	F. Harrell		10 *s.* „	Boy	Martha Birnie	Adelaide.
2238	A. G. Beaumont		15 *s.* „	Boy	Little Reaper	West Indies.
2173	E. Owen		1 *l.* „	Boy	Tiverton	Bombay.
2197	C. Ellis		10 *s.* „	Boy	White Eagle	Adelaide.
2210	J. Thompson		10 *s.* „	Boy	„	„
2215	W. Quested		1 *l.* „	Boy	Abbotsford	Callao.
2224	J. Stokes		1 *l.* „	Boy	Bates Family	Calcutta.
2231	T. Norgan		1 *l.* „	Boy	„	„
2242	J. Leech		15 *s.* „	O. S.	Duke of Edinboro'	New Zealand.
2253	T. Bradley		1 *l.* „	Boy	Lady Bowen	Sydney.
2219	J. Birmingham		10 *s.* „	Boy	Robert Lees	Calcutta.
2256	A. Morss		30 *s.* „	O. S.	Zenobia	China.
2261	F. Brind		2 *l.* „	Baker	Bevinton	New Zealand.
2183	S. Thomas		2 *l.* „	Engine Driver	Sirocco	Quebec.
2259	J. Hooper		30 *s.* „	O. S.	Braemar Castle	China.
1994	H. Goodyear		2 *l.* „	Baker	William Davie	New Zealand.

RETURN of Boys sent to Sea between 1st September 1873 and 31st September 1874 (both Days inclusive)—*continued.*

No.	Names.	If Indentured, the Term of Years.	Wages.	Capacity.	Ship.	Destination.
443	T. Badger		15 *s.* per month	Boy	Harvest Home	New Zealand.
848	W. Howden		15 *s.* „	Officers' servant	John Tennant	Calcutta.
877	J. L. Payne		15 *s.* „	Boy	Canning	Melbourne.
542	W. H. Snow		10 *s.* „	Boy	J. C. Stevenson	Calcutta.
860	T. Slater		10 *s.* „	Boy	„	„
875	H. Dean		10 *s.* „	Boy	„	„
726	J. Allen		25 *s.* „	O. S.	Red Jacket	New Orleans.
754	C. Dove		15 *s.* „	O. S.	Rollo	Shanghai.
859	H. Lockwood		1 *l.* „	O. S.	Tasmania	Pensacola.
619	H. Barnes		15 *s.* „	Boy	Bertha	Calcutta.
550	R. Farrant	4 years	40 *l.* per annum	Apprentice	Carron	Rio de Janeiro.
743	F. Pullen		15 *s.* per month	O. S.	Southern Bell	Queensland.
616	S. Isaacs		1 *l.* „	Boy	Poonah	Calcutta.
803	W. Doughty		1 *l.* „	Boy	„	„
626	J. Magnus		1 *l.* „	Boy	Maliva	India and China.
717	C. A. Porch		1 *l.* „	Boy	„	„
634	H. W. Redford		10 *s.* „	Boy	Richard Williams	Africa.
816	H. G. Hickman		15 *s.* „	O. S.	Woodlark	New Zealand.
756	G. Wollands		1 *l.* „	O. S.	Scimitar	„
818	S. Haggett		15 *s.* „	Boy	Shannon	Mauritius.
755	W. Knowles		12 *s.* „	Boy	Norman Court	Sydney and China.
897	A. J. Royston		1 *l.* „	O. S.	Zambesi	Pensacola.
824	J. Panks		15 *s.* „	Boy	Royal Family	Cardiff and Callao.
858	J. Jesson		15 *s.* „	Boy	H. Clarke	Belise.
869	W. H. Harris		10 *s.* „	Boy	Navarino	Calcutta.
820	J. H. Bailey		15 *s.* „	Boy	Richard Wright	San Francisco.
892	H. Wood		15 *s.* „	Boy	„	„
681	J. Michie		10 *s.* „	Boy	St. James	Brisbane.
721	J. Dellamore		10 *s.* „	Boy	Hereford	New Zealand.
792	C. W. Parmentor		15 *s.* „	Boy	Leander	Sidney and China.
934	W. Hall		25 *s.* „	O. S.	Dunmphaile Castle	Madras.
862	W. George		30 *s.* „	O. S.	Patrocles	China.
878	J. Watts		15 *s.* „	O. S.	Coromandel	Kurrachee.
914	E. Healey		15 *s.* „	Boy	Ningpo	Adelaide.
412	W. Gaffer		15 *s.* „	Boy	City of Ningpo	„
684	T. Hollings		15 *s.* „	O. S.	Carisbrooke Castle	New Zealand.
640	G. Love		15 *s.* „	Boy	Pak Waa	Adelaide and China.
649	T. Hatton		15 *s.* „	Boy	Quang Se	Calcutta.
654	W. Healey		15 *s.* „	Boy	Duke of Edinboro'	New Zealand.
685	J. Coles		15 *s.* „	Boy	Silver Eagle	Sydney and China.
999	W. J. Baker		1 *l.* „	O. S.	Red Jacket	Montreal.
677	H. Ford		15 *s.* „	Boy	Star of India	New Zealand.
960	W. Simpson		1 *l.* „	O. S.	Sirocco	Quebec.
1001	W. Day		15 *s.* „	Boy	Salisbury	Melbourne.
808	J. Moore		15 *s.* „	Boy	„	„
605	R. Snelling		15 *s.* „	Boy	Jane Richardson	Montserrat.
103	J. Saunderson		50 *s.* „	O. S.	Glengyle	China.
625	E. Bartlett		1 *l.* „	Boy	Seaham	Jersey and France.
275	E. Sixsmith	3 years & 4 months.	38 *l.* per annum		Ella	Coasting.

Total Number of Boys sent to Sea - - - 95.

TRAINING SHIPS

STATEMENT of the TIME Boys remain on board TRAINING SHIPS; also the Number who have joined the ROYAL
Established to 1st

NAME OF SHIP.	Date and Year when Established.	Time Boys remain on Board.	AGES OF BOYS.	
			Minimum and Maximum Age for Joining Ship.	Minimum and Maximum Age for Leaving Ship.
CONWAY	August 1859	2 years	13 and 16	15 and 18
WORCESTER	August 1862	2 to 2½ years	12 and 16	15 and 18

TRAINING SHIPS

STATEMENT of the TIME Boys remain in Training on board TRAINING SHIPS; also the Number who have
Time the Ships were first

NAME OF SHIP.	Date and Year when Established.	Time Boys remain on Board.	AGES OF BOYS.	
			Minimum and Maximum Age for Joining Ship.	Minimum and Maximum Age for Leaving Ship.
AKBAR	1856	Committed for 5 years; remain a little over 3 years.	12 and 16	15 and 19 Depends upon conduct; have power to put out on license after 1½ years detention.
CLARENCE	15 August 1864	3 to 3½ years	11 and 15	None
CHICHESTER	December 1866	1 year on an average	13 and 17	14 and 18
CORNWALL	June 1859	Average time about 2 years and 9 months.	11 and 15	According to sentence and admission.
CUMBERLAND	30 June 1869 This is the date of the ship's certificate from Secretary of State. After that the ship had to be fitted up and boys collected, so that it was about the commencement of 1870 that the institution really was in order and acting.	All boys are committed to the ship until they attain 16 years of age; but so soon as they reach a certain standard in education and in seamanship they are sent to sea. The average time of detention has been about 3 years. It is, however, expected to be less in future.	11 and 14	14 and 16 and upwards
ENDEAVOUR	The training brig was established 18th July 1866 (when the school commenced to train boys for the sea).	Average 2 years 4 months (including time in other divisions of the school before being placed in the Nautical Division).	12 and 14 (about)	13 and 16 (about)

FOR OFFICERS.

NAVY and MERCHANT SERVICE respectively, and the Number drafted on Shore from the Time the Ships were first September 1874.

Number entered in Royal Navy since First Establishment.	Number entered in Merchant Service since First Establishment.	Number Drafted to other Occupations, Deaths, &c. since First Establishment.	Station of Ship.	REMARKS.
As Naval cadets, &c., 40	775	Not wishing to go to sea - - 162	Liverpool - - -	Intended to bring up gentlemen's sons for officers in the Merchant Service.
5	574	138	Greenhithe, Kent - -	23 joined the Royal Naval Reserve as midshipmen.

FOR SEAMEN.

joined the ROYAL NAVY and MERCHANT SERVICE respectively, and the Number drafted Ashore from the Established to 1st September 1874.

Number entered in Royal Navy since First Establishment.	Number entered in Merchant Service since First Establishment.	Number Drafted to other Occupations, Deaths, &c. since First Establishment.	Station of Ship.	REMARKS.
None - - - Royal Navy refuse to take boys direct from a reformatory ship.	635	308	River Mersey, near Rock Ferry, Birkenhead.	—
None - - - Are not admissible to Navy.	438	43	River Mersey.	—
146	1,217	22	Greenhithe.	—
3	987	233 This includes emigration, discharge to friends, &c.	Off Purfleet, Essex.	—
4 Until lately no facilities were afforded for getting the boys into the Royal Navy, and the pecuniary advantages offered in the Mercantile Marine account for the small number entered in the Royal Navy.	315	123 Of these, since being discharged from the ship, about one-fourth have left shore employment and gone to sea in the Merchant Service. 15 deaths on board and in hospital.	Row Bay, Gareloch, Dumbartonshire.	—
88 (46 as band boys.)	642 Up to 31st August 1874.	The number from the Nautical Division would be very small, but very large from the other divisions, besides soldiers, emigrants, &c.	Model Training Brig at Middlesex Industrial School, Feltham.	It is to be explained that the school is established for 800 boys, of whom 150 belong to the Nautical Section and are training for the sea, on board a model training brig. Rowing is taught on the River Thames, and swimming in a bath at the school.

STATEMENT of the Time Boys remain on board Training Ships; also the Number who have joined the Royal Navy and Merchant

NAME OF SHIP.	Date and Year when Established.	Time Boys remain on Board.	AGES OF BOYS.	
			Minimum and Maximum Age for Joining Ship.	Minimum and Maximum Age for Leaving Ship.
FORMIDABLE	Certified 29th November 1869 (first boy on board 1st December 1869).	2 to 3 years	11 and 13 years (a few at 10 years).	15½ and 16 years
GIBRALTAR	7th June 1872	Until 16 years of age generally	10 and 14	May be sent out on license any time after they have been on board 18 months; cannot be kept after 16.
GOLIATH	9th November 1870	Depending on their age, size, ability, and capability.	9 and 15½	From 14 to 16
HAVANNAH	A.D. 1861	2, 3, 4, 5, and 6 years	10 and 12	14 and 16
INDEFATIGABLE	July 1865	Average 2½ years	12 and 15	15 and 18
MARS	30th September 1869	3 to 4 years	Minimum age 12 years, unless very stout; and not admitted at 12 unless healthy growing boys fit for being sailors.	Cannot be detained over 16 years; generally about 16 when discharged.
SOUTHAMPTON	24th September 1868	Till 16 years of age	11 and 14	14 and 16
WARSPITE	1756	About 9 months; boys who become fit for Royal Navy do not remain so long.	14 and 16	The boys leave in turn, as soon as a certain course of training has been gone through.
WELLESLEY	17th January 1868	Until 16 years of age	Minimum now 12 years; formerly 10 years.	16

Total Number entered the Royal Navy from 11 Ships

Ditto Indian Navy

Service respectively, and the Number drafted Ashore from the time the Ships were first Established to 1st September 1874—*cont*ᵈ.

Number entered in Royal Navy since First Establishment.	Number entered in Merchant Service since First Establishment.	Number Drafted into other Occupations, Death, &c., since First Establishment.	Station of Ship.	REMARKS.
15	144	6 emigrated 1 Scots Greys' band. 3 situations on shore. 4 transferred to other schools. 4 died. 18	Off Portishead, Somersetshire.	—
1	7	4	Belfast.	—
26	430	156 into army as musicians 95 taken by friends. 32 returned to their schools. 16 to situations on shore. 8 deaths. 307	Off Grays, Essex, River Thames.	From date of establishment to 1st September 1874, 1,162 boys were admitted; there being on board on that day 399, it follows that 763 were provided for in manner as described in this return. *W. S. Bourchier,* Captain Superintendent.
5	54	62	Grange-road, Cardiff	The Superintendent is in communication with 34 out of the 59 boys who have gone to sea from the "Havannah." No case of desertion has come to his knowledge. *J. Watson,* Hon. Sec. Llandaff, 23 Oct. 1874.
1	369	36	River Mersey, Liverpool.	—
12	147	75 to trades 23 physically unfit for sea. 98	River Tay, near Dundee	A much larger proportion of the boys would go direct into the Royal Navy if the law allowed them to be detained a year longer. Only a few come up to the standard at 16 years of age. About three-fourths of those sent to trades return, and are fitted out for sea. *G. J.,* 7 Nov. 1874. Secretary to "Mars."
None	101	80	Hull	Of the 101 boys sent to sea, 6 are dead and 25 are now working on shore. Of the 80 boys sent to employment on shore, 10 have since gone to sea.
29,380 Royal Navy, 3,760 Indian Navy.	24,681	None	Woolwich	"Warspite" belongs to the Marine Society, which originated the training ship system in the last century. All boys are subjected to a strict medical examination before admission, and engage to serve wherever they may be sent, whether Royal Navy or Merchant Service.
None	144	66 Very many of these have gone to sea subsequently.	Shields, River Tyne	When we first began to send boys to sea, 66 were apprenticed; only one of these served his time, having remained the whole time in China. The remainder have mostly done well. We have sent our boys to sea as O.S. at 30*s.*, very rarely less; and engineers' stewards at same wages. The boys have, as a whole, turned out remarkably well.
29,781 3,760	30,311	Total Number entered Merchant Service from 15 Ships.		

MIDDLESEX INDUSTRIAL SCHOOL, FELTHAM.

The "Endeavour."

Return of the Number of Boys shipped from the School into the Merchant Service between the 18th July 1866 and 31st August 1874.

At Sea in the following Capacities:		
Stewards	17	
Cooks and Stewards	5	
Cooks	3	
Officers' Servants	4	
Bakers	4	
Engine Drivers	6	
Stokers	4	
Able Seamen	105	
Ordinary Seamen	119	
Boys	67	
Have since entered Royal Navy	49	
Apprentices	46	
Quartermasters in Steam Vessels	5	
		434
Working on Shore, in the Colonies or at Home		40
Died		22
Injured at Sea		2
Enlisted in the Army after being at Sea		5
Coasting in the Colonies, and not heard of since paying off from first voyage.		86
Uncertain		34
Fallen into criminal habits		19
Total		642

TRAINING SHIPS.

COPY of a CIRCULAR LETTER, addressed by the BOARD of TRADE to the SECRETARIES of the different TRAINING SHIPS, and of their REPLIES, and TABULAR STATEMENTS in answer thereto, showing the Number of BOYS who have entered the ROYAL NAVY, the MERCHANT SERVICE, and other Occupations on Shore respectively, the Length and Pecuniary Terms of the Indentures of Apprenticeship, and the Place where established; Class, Staff, and Working Expenses of the several Vessels.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed,*
8 *February* 1875.

Under 3 *oz.*

RETURN to an Order of the Honourable The House of Commons, dated 7 April 1875;—*for*,

COPY "of CIRCULAR DESPATCH addressed by the Foreign Office to Her Majesty's Representatives in Maritime Countries, relative to the question of the TRANSFER of alleged UNSEAWORTHY SHIPS to a FOREIGN FLAG, together with the REPLIES thereto."

Board of Trade, 10 August 1875. } T. H. FARRER.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed*, 7 *April* 1875.

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COPY of CIRCULAR DESPATCH addressed by the Foreign Office to Her Majesty's Representatives in Maritime Countries, relative to the question of the TRANSFER of Alleged UNSEAWORTHY SHIPS to a FOREIGN FLAG, together with the REPLIES thereto.

— No. 1. —

COPY of CIRCULAR DESPATCH addressed by the Foreign Office to Her Majesty's Representatives in Maritime Countries.

Foreign Office, 3 February 1875.

YOU are aware that Her Majesty's Government have had under their serious consideration the subject of the prevention of the use of unseaworthy ships; and that the Merchant Shipping Acts of 1871 and 1873 were passed with the view to carry into effect the decision come to in the matter. There is, however, a constant and increasing danger that any law to prevent the use of this class of vessels in the United Kingdom will be evaded as long as such ships can easily be transferred to a foreign flag. Her Majesty's Government have therefore determined to appeal to Maritime Powers to assist them in a matter which is of the greatest importance for the safety of life and property, no less than for the credit of the mercantile navy of different States.

I have accordingly to request that you will address a communication on this subject to the Government to which you are accredited, and propose to them that their consular officers in the United Kingdom should be instructed to communicate with the Board of Trade whenever a British vessel is about to be transferred to the flag of their country, in order that a survey of such vessel may be made by the Government surveyor; any special expense thereby incurred being defrayed by the ship.

I trust that the course of action suggested in this Despatch will meet with the concurrence of the Government to which you are accredited; and that they will find no difficulty in furnishing to their consular officers in this country instructions to this effect.

I am, &c.
(For the Earl of Derby)
(signed) *Robert Bourke.*

REPLIES.

— No. 2. —

(M. 2544.)

BELGIUM.

Mr. *Lumley* to the Earl of *Derby*.

My Lord, Brussels, 13 February 1875.

Enclosure.

With reference to your Despatch, No. 3, of the 14th ultimo, I have the honour to transmit to your Lordship a copy of a Ministerial Arrêté of the 27th of January, providing, firstly, that in future, provisional sailing letters shall be delivered to vessels purchased or constructed abroad only on the production of a certificate proving that they are seaworthy; secondly, that in the case of vessels transferred from the British to the Belgian flag, such certificates shall emanate from the inspectors of the Board of Trade.

I have, &c.

The Earl of Derby, &c. &c. &c.

(signed) *J. Savile Lumley.*

Enclosure in No. 2.

Ministère des Finances.

Administration des Contributions Directes, Douanes et Accises.

Lettres de Mer Provisoires pour Des Navires Acquis à l'Étranger.

Le Ministre des Finances,

Revu l'Article 8 de la loi du 20 Janvier 1873, accordant au Ministre des Finances le pouvoir de délivrer, pour les navires achetés ou construits à l'étranger, des lettres de mer provisoires qui les autorisent à naviguer pendant deux ans au plus sous pavillon belge sans venir dans un port de Belgique;

Considérant que le Gouvernement Anglais a pris récemment des mesures pour interdire la navigation aux navires britanniques qui ne pourraient tenir la mer sans danger pour la vie de ceux qui les montent, et qu'afin d'échapper à l'application de ces mesures, certains armateurs tentent, au moyen de ventes réelles ou simulées, de faire passer sous pavillon belge des navires de cette espèce;

Considérant que, dans l'intérêt de l'humanité et même dans l'intérêt de la marine marchande belge, il importe de ne pas favoriser de semblables manœuvres par la délivrance de lettres de mer provisoires qui, en soustrayant les navires en question à l'action des autorités étrangères, les dispenseraient en même temps de la visite prescrite en Belgique par l'Article 225 du Code de Commerce, ces bâtiments ne fréquentant pas les ports belges;

Arrête:

Art. 1er. A l'avenir, aucune lettre de mer provisoire ne sera délivrée en vertu de l'Article 8 de la loi du 20 Janvier 1873, pour des navires achetés ou construits à l'étranger, si ce n'est sur la production d'un certificat constatant qu'ils sont en bon état de navigabilité.

Art. 2. Pour les navires qui, au moment de devenir propriété belge, portent le pavillon britannique et se trouvent dans un port du Royaume-Uni, ces certificats devront émaner des inspecteurs commissionnés par le "Board of Trade" pour la visite des bâtiments de mer.

Afin

Afin d'obtenir l'intervention de ces agents, les intéressés devront s'adresser directement au consul de Belgique à Londres.

Art. 3. Dans tous les autres cas, les certificats de navigabilité devront être signés de deux experts désignés par le consul de Belgique du port où le navire se trouve ou par le consul le plus voisin; ils devront être visés par se consul, qui certifiera dans son visa que les experts ont été désignés par lui.

(signé) Le Ministre, *J. Malou.*

Bruxelles, le 27 Janvier 1875.

— No. 3. —

(M. 8122.)

FRANCE.

Lord *Lyons* to the Earl of *Derby.*

My Lord, Paris, 22 May 1875.

With reference to your Lordship's Commercial Despatch of the 3rd February last, marked Circular, and to my Commercial Despatch, No. 28, of the following day, I have the honour to transmit herewith to your Lordship a copy of a note from the Duc Decazes, conveying the answer of the French Government to the representation of Her Majesty's Government respecting the transfer of unseaworthy British ships to foreign flags. Enclosure.

The French Government declines to accede to the proposal of Her Majesty's Government, that a survey of British vessels about to be transferred to the French flag shall be made by the British Government surveyor.

I have, &c.

The Earl of Derby, &c. &c. &c. (signed) *Lyons.*

Enclosure in No. 3.

Monsieur l'Ambassadeur. Paris, 21 Mai 1875.

Par une lettre en date du 4 Février dernier, votre Excellence m'a fait l'honneur de m'entretenir d'une proposition se rattachant à l'application des "Merchant Shipping Act" de 1871 et 1873, en ce qui concerne celles de leurs dispositions qui ont pour objet de prévenir l'emploi des bâtiments de mer en état d'innavigabilité, dans l'opinion du Gouvernement Britannique, il serait facile d'éluder ces dispositions légales, tant que les bâtiments anglais pourraient être facilement admis à prendre un pavillon étranger; votre Excellence exprimait, en conséquence, le désir que les consuls de France dans le Royaume-Uni fussent invités à entrer en communication avec le "Board of Trade," toutes les fois qu'un navrie anglais serait sur le point d'être francisé, afin qu'une visite pût être faite à bord par un inspecteur du Gouvernement.

Appréciant hautement les considérations d'humanité qui ont suggéré cette proposition, le Gouvernement Français l'a examinée avec une attention particulière et avec le désir de pouvoir répondre à l'appel que le Gouvernement de Sa Majesté Britannique voulait bien lui adresser en même temps qu' aux autres Puissances maritimes.

De cet examen, auquel mon départment a procédé de concert avec les autres administrations compétentes, il est résulté, Monsieur l'Ambassadeur, que la législation française offrait, en cette matière, des garanties au moins équivalentes à celles que le Gouvernement Britannique désirait assurer à la navigation; tout navire français qui est armé ou réarmé dans un port étranger doit, en effet, être soumis, avant de prendre la mer, à des visites prescrites par la loi du 9 Août 1791 et par l'Article 225 du Code de Commerce, dont les dispositions sont rappelées par l'Article 43 de l'ordonnance du 29 Octobre 1833 sur les fonctions des consuls dans leurs rapports avec la marine commerciale. Contraindre les navries achetés pour compte français à subir, en outre, la visite d'un inspecteur du Gouvernement Britannique, entraînerait tout au moins des lenteurs pour les intéressés, sans que cette mesure fût justifiée par l'intérêt supérieur de la sécurité des équipages.

Je ne doute pas que le Gouvernement de Sa Majesté Britannique, complètement éclairé sur l'état de la législation française, ne reconnaisse que la proposition dont il s'agit n'aurait pas, en ce qui touche les francisations, l'utilité pratique qu'elle présenterait par rapport à des pays dont la législation maritime n'assurerait pas aussi efficacement le contrôle des conditions de navigabilité des bâtiments de mer. Dès lors, la visite supplémentaire à laquelle il serait procédé aurait pour conséquence d'imposer, sans nécessité, à

la liberté des transactions des entraves qu'il convient de supprimer autant que possible, et elle pourrait faire naître entre les agents du "Board of Trade" et les agents consulaires français en Angleterre des divergences d'appréciations qu'il serait très-regrettable de voir se produire. Je dois ajouter qu'en principe, lorsque les consuls de France remettent à un bâtiment des papiers de bord provisoires et l'autorisent à porter le pavillon national, ils se sont préalablement assurés que le navrie a été réellement acheté pour compte français; par suite, la délivrance des actes de francisation, ne concernant que des navires devenus propriété française, doit être soumise exclusivement aux dispositions de la loi française.

Je ne puis, Monsieur l'Ambassadeur, que vous prier de vouloir bien porter à la connaissance du Gouvernement de Sa Majesté Britannique ces diverses considérations dont il ne saurait manquer d'apprécier la valeur.

Agréez, &c.
(signé) *Decazes.*

Votre Excellence,
L'Ambassadeur d'Angleterre,
&c. &c. &c.

— No. 4. —

(M. 4327.)

GERMANY.

Lord *Odo Russell* to the Earl of *Derby*.

My Lord, Berlin, 13 March 1875.

With reference to your Lordship's Commercial Circular of the 3rd ultimo, instructing me to ask the German Government whether they would agree to an arrangement by which their consular officers in the United Kingdom should be instructed to communicate with the Board of Trade, whenever a British vessel is about to be transferred to the flag of Germany, in order that a survey of such vessel may be made by the Government surveyor, any special expense thereby incurred being defrayed by the shipowners, I have the honour to enclose copy and translation of a note which I have received from Herr von Bülow, from which it appears that so long ago as May 1874 the attention of the German consuls was called to the irregularities constantly occurring in such transfers.

Enclosure.

As your Lordship will see, from the enclosed note, the Imperial Government are anxious to co-operate with Her Majesty's Government in this matter, and have already instructed their consul general in London to give the necessary orders to the consular officers within his district.

I have, &c.
(signed) *Odo Russell.*

The Earl of Derby,
&c. &c. &c.

Enclosure in No. 4.

(Translation.)

Foreign Office, Berlin, 10 March 1875.

The undersigned has learnt with interest, from the note of his Excellency Lord Odo Russell, of the 12th ultimo, that Her Britannic Majesty's Government is solicitous to take into consideration the introduction of joint international measures for the protection of commerce against unseaworthy ships. Whilst warmly thanking his Excellency for this communication, the undersigned avails himself of this opportunity to observe that the subject in question has for some time past occupied the attention of the authorities of this country. It has, for instance, come to our knowledge, that not unfrequently English shipowners have, by means of fictitious sales, tried to bring their ships under foreign flags, especially under the German flag, in order to elude the recent English regulations, which, with a view to avoid shipwreck, fix a limitation to the draught of English ships.

In consequence of the closer inquiries made on this subject by our Government, it was found to be expedient for us to take into consideration special precautionary measures for the protection both of crew and cargo; in the cases of transfer of British ships into the German marine conformably to this, and in execution of the instructions sent to him, the Imperial consul general in London issued the enclosed Circular order on the 6th May 1874, to the consular officers of his district whom it concerned. According to this order,

Sub-Enclosure.

in

in cases where a temporarily certified consular attest (granting the right to carry the German flag is sought for) a ship previously sailing under the British flag to hoist the German flag, under the regulations of the law of the 25th October 1867 respecting the nationality of merchant ships, the concession of the same shall be dependent on the fact that the consul has acquired the full conditions that the ship in question is perfectly seaworthy, and that the transaction to be concluded is *bonâ fide*.

While referring to this order of his Government already in force, the undersigned is extremely gratified to learn that the British Board of Trade (as he gathers from the note of the 12th ultimo above alluded to) is prepared to accord its co-operation to the end above indicated, namely, in such cases to give orders for the requisite overhauling of the ships by an official of the British Government, at the instance of the German authorities. The undersigned has not failed to inform the Imperial consul general in London of this fact, and to employ him further with the adequate instructions, in order whenever the occasion arises to carry out a line of action, securing the execution of the wishes of both Governments.

The undersigned, in begging his Excellency the Ambassador to inform Her Britannic Majesty's Government of the steps taken in the matter by the German Government,

Avails himself, &c.

The Lord Odo Russell, G.C.B. (signed) *Herr von Bülow.*

Sub-Enclosure.

Consulate General of German Empire, London,

Dear Sir, 6 May 1874.

IT having come to the knowledge of the Imperial Government that several unseaworthy British ships have recently been purchased by German subjects, I am directed to draw your attention to the fact, and to say that it is the wish of the Government that such transactions, so far as regards unseaworthy ships, should be discouraged, or altogether prevented if possible.

The control, which as consul you can exercise in such cases, is founded on the law of the 25th October 1867, and Section 30 of the German instructions, whereby in the event of any foreign ship becoming by transfer the property of a German subject, the consul is authorised (but not compelled) to grant an attestation (*Flaggen attest*), which for one year will stand in the place of the official German registration and certificate.

If you are therefore at any time requested to give such attestation, it will be your duty, before doing so, to convince yourself by every means at your disposal, that the ship is perfectly seaworthy, and the transaction altogether *bonâ fide*, and in the event of your not being satisfied upon these points, you are liberty to withhold the attestation.

If the purchaser contends that his interests may be damaged by your decision, it may be left to him to take such steps as he may think proper.

I am, &c.

(signed) *Bojanowski*, Consul General.

— No. 5. —

(M. 5934.)

GREECE.

Mr. *Stuart* to the Earl of *Derby*.

My Lord, Athens, 2 April 1875.

WITH reference to your Lordship's Despatch, marked Circular Commercial, of the 3rd of February last, and to the suggestion therein contained, that the foreign consular officers in the United Kingdom should be instructed to communicate with the Board of Trade whenever a British vessel is about to be transferred to the flag of their country, with a view to prevent the use of unseaworthy ships, I have the honour to enclose a copy of a note from the Hellenic Minister for Foreign Affairs, informing me that the Hellenic Government have readily adopted your Lordship's suggestion, and have directed Monsieur Valaority to send instructions accordingly to the Hellenic consular officers under his jurisdiction. Enclosure.

I have, &c.

The Earl of Derby, &c. &c. &c. (signed) *W. Stuart.*

Enclosure in No. 5.

Monsieur le Ministre, Athènes, le 19/31 Mars 1875.

Je me suis empressé de communiquer au Ministère de la Marine le contenu de votre note en date du 27 Février dernier, en lui exprimant en même temps l'opinion qu'il serait favorable aux intérêts de la Marine Hellénique d'accepter la mesure proposée par le Gouvernement de Sa Majesté Britannique, dans l'intention digne de tout éloge de préserver de tout danger, non seulement la vie et la fortune des individus, mais encore le credit du commerce.

Mon collègue au départment sus-mentionné ayant partagé mon avis à cet égard, j'ai l'honneur de vous informer que je viens d'écrire au Ministre de Sa Majesté à Londres, en le priant de donner les instructions nécessaires aux autorités consulaires sous sa jurisdiction, afin que toutes les fois qu'un bâtiment anglais doit prendre le pavillon Hellénique, il soit au préalable examiné par l'inspecteur préposé à cet effet dans le sens de votre communication.

Veuillez agréer, &c.

A l'Honourable Wm. Stuart, C.B., &c. &c. &c. (signé) *J. Delyanni.*

— No. 6. —

(M. 4756.)

ITALY.

Sir *Augustus Paget* to the Earl of *Derby.*

My Lord, Rome, 16 March 1875.

With reference to your Lordship's Despatch, marked Circular Commercial, of the 3rd ultimo, I have the honour to transmit herewith a copy, together with a translation of a note which I have just received from the Minister of Foreign Affairs in reply to a note from me proposing to the Italian Government in the terms of your Lordship's Despatch, that their consular officers in the United Kingdom should be instructed to communicate with the Board of Trade whenever a British vessel is about to be transferred to the flag of their country, in order that a survey of such vessel may be made by the Government surveyor, any special expense thereby incurred being defrayed by the ship.

Enclosure.

It appears from the enclosed note that the Minister of Marine, to whom the proposal of Her Majesty's Government has been referred, while applauding its spirit, remarks that in every case of the transfer of a ship from a foreign to the Italian flag, the Government of the nation to which the ship has hitherto belonged must, in conformity with the Italian consular regulations, be informed of the transaction before it can be completed, that previously to the issue of the certificate required by an Italian consul to show that the vessel is no longer under the British flag, the British authorities can cause such survey to be made as may be deemed expedient; that, however, the survey prescribed by the Italian Mercantile Marine Code for ships fitted out in foreign ports will not be dispensed with on that account, and that consequently the British survey ought not to be at the charge of the Italian purchaser, who is subject to the obligation imposed by the law of Italy.

The Minister of Marine thinks it right to make this last observation, because he does not clearly understand whether it is the meaning of Her Majesty's Government that the seller or that the purchaser of the ship should defray the expense of the proposed survey.

I have, &c.

The Earl of Derby, &c. &c. &c. (signed) *A. Paget.*

Enclosure in No. 6.

(Translation.)

M. le Ministre, Rome, 15 March 1875.

I COMMUNICATED to the Minister of Marine the desire of the British Government, expressed by you to me in your note of the 20th of February last, that instructions might be given to our consuls in the United Kingdom to place themselves in communication with the Board of Trade whenever a British vessel takes the Italian flag, so that an inspection be made by the British Government to see whether she be seaworthy. My honourable colleague at the Marine considers the thought which inspired the proposal most praiseworthy; but he notes that whenever a foreign vessel, owing to a transfer of property, is to be under the Italian flag, the Government to which it formerly belonged is informed of it before its fitting out, the Italian Consular Agent being unable (owing to the 148th Article of the Consular Regulations), save in exceptional cases, to provide the ship with provisional papers without seeing produced the certificate of the hauling down of the foreign flag.

Before writing this document, therefore, the authorities of the British Marine might make that inspection which they might consider opportune to assure themselves of the good state of the vessel. These assurances besides, though no doubt useful, would only be of the character of preventive measures; since according to Article 82 of the Italian Code of Mercantile Marine, even national ships which *fit out* or load abroad are subject to the inspection prescribed by Articles 70 and 80 of the same code, and precisely in the first case, that of *fitting out*, this is verified always when the ship hoists the Italian flag for the first time.

Anyhow, the visit which would be made by the British authorities, so thinks the Minister of Marine, could not justly be at the charge of the buyers of the ships, who have to provide for the inspection required by our law. The Minister of Marine thought it advisable to add this observation, as it was not clear from your communication whether by *proprietors* of the ship who are to pay these charges, the British Government means those who sell or those who buy the ship.

Receive, &c.

(signed) For the Minister, *T. G. Peiroleiri.*

— No. 7. —

(M. 3464.)

NETHERLANDS.

Mr. *Fenton* to the Earl of *Derby.*

My Lord, The Hague, 1 March 1875.

WITH reference to my Despatch, No. 5, Commercial, of the 9th ultimo, in which I informed your Lordship that, in accordance with the instructions conveyed to me in your Lordship's Despatch, of this series, Circular, of the 3rd of February last, I had addressed a note to the Netherlands' Minister for Foreign Affairs, proposing to His Excellency, in the name of Her Majesty's Government, that with a view to preventing the transfer of unseaworthy British vessels to the Dutch flag, instructions should be sent by the Netherlands Government to their consuls in the United Kingdom to communicate with the Board of Trade whenever a British vessel should be about to be so transferred, in order that a survey of the vessel might be made by the Government surveyor, I have the honour to enclose herewith a copy of a note which has been addressed to me by the Minister for Foreign Affairs in reply to my above-mentioned communication. In this note, his Excellency, whilst expressing the satisfaction with which the Netherlands Government has received the proposal of Her Majesty's Government, explains that, under existing circumstances, instructions in the sense suggested to be sent to the consuls of the Netherlands would fail to attain the object desired, as the law now in force with reference to the transfer of foreign vessels to the Dutch flag does not make the intervention of the Netherlands consular officers in these transactions obligatory, neither does it authorise the Government to refuse a register to a vessel on account of its defective condition. But his Excellency states that this Government has, for some time past, had the

Enclosure.

subject of unseaworthy vessels, and the necessity of more stringent measures respecting them, under its consideration, and has entered into communication with the principal chambers of commerce of this country with reference to the establishment of a regulation which would make the production of a certificate of seaworthiness delivered by an expert a necessary condition of the grant of a Netherlands register to every vessel purchased in a foreign country, and His Excellency adds that he will communicate to me any decision that may be come to on this question, with the object of establishing, if possible, an understanding respecting it between the Netherlands Government and that of Her Majesty.

I have, &c.

The Earl of Derby, &c. &c. &c.

(signed) *H. P. Fenton.*

Enclosure in No. 7.

Monsieur le Chargé d'Affaires, La Haye, le 27 Février 1875.

En réponse à votre office du 9 de ce mois, j'ai l'honneur de porter à votre connaissance que le Gouvernement du Roi n'a pu qu'accueillir avec satisfaction la proposition que vous avez été chargé de lui faire concernant des instructions à donner aux officiers consulaires des Pays Bas dans la Grande Bretagne à l'effet de prévenir les manœuvres fraduleuses qui pourraient être à craindre de la part des armateurs britanniques qui, éludant les dispositions des lois dites, "Merchant Shipping Acts de 1871 et 1873" tenteraient de faire passer sous pavillon étranger des navires que le "Board of Trade" aurait désignés comme étant hors d'état de tenir la mer.

Je me permets toutefois de vous faire observer que dans les circonstances existantes, il est à présumer que la proposition de votre Gouvernement n'aurait pas tout le résultat désirable, vu que les intéressés ne soumettent pas habituellement aux officiers consulaires les titres de propriété, nécessaires pour faire passer un batîment anglais sous pavillon Néerlandais, mais que d'ordinaire ils envoyent ces pièces directement au Ministre des Finances à la Haye, de sort que dans la plupart des cas les consuls ne sont instruits du changement de nationalité d'un navire que lorsque la vente en a déjà eu lieu.

L' article 10 de la loi du 28 Mai 1869 (Journal Officiel, No. 69), n'autorise pas le Gouvernement à exiger des armateurs qu'ils produisent leur titres de propriété aux officiers consulaires avant la vente du navire, ce qui d'ailleurs ne manquerait pas d'entraîner beaucoup de difficultés dans l'exécution, vu que pour pouvoir procéder à la vente ces pièces doivent être enrégistrées et qu'à cet effet elles sont ordinairement expédiées dans les Pays Bas.

En second lieu, cette loi ne permet pas de refuser des lettres de mer à cause de l'état dans lequel se trouve le navire.

Ce n'est donc qu'en conséquence des circonstances fortuites qu'il peut arriver qu'un consul soit informé d'avance de la vente d'un batîment, et pour empêcher le mal qu'il s'agit de combattre, il serait entièrement insuffisant d'ordonner aux officiers consulaires de demander dans ces cas exceptionnels des certificats du "Board of Trade."

Le Gouvernement du Roi qui depuis quelque temps déjà a fixé son attention sur les dangers qui pourraient résulter de la non observation des dispositions du "Merchant Shipping Act," est d'avis que pour obtenir le résultat désiré, il est besoin de mesures plus énergiques, et examine à cet effet la question s'il ne serait pas opportun de ne délivrer dorénavant des lettres de mer aux navires de provenance étrangère que sur la production d'un certificat d'experts constatant que le batîment est en état de tenir la mer.

Une correspondance à cet égard est engagée avec les principales chambres de commerce du pays. Aussitôt qu'une décision aura été prise à cet égard, je ne manquerai pas, Monsieur le Chargé d'Affaires, de vous en prévenir, afin d'établir s'il y a lieu, une entente avec votre Gouvernement dans une question d'une si grande importance pour la Marine Marchande des deux Royaumes.

Je saisis, en attendant, &c.,

Monsieur Fenton, &c. &c. &c.

(signé) *Vd. Dd. Willebois.*

— No. 8. —

(M. 3705.)

PORTUGAL.

(Translation.)

Señor *Corvo* to Mr. *Cobbold.*

Sir, Lisbon, 23 February 1875.

I HAVE received your note of the 15th instant, requesting that instructions may be given to Portuguese consular agents in Great Britain to communicate with the Board of Trade whenever a British vessel is about to be transferred to the Portuguese flag, in order that the English laws concerning unseaworthy ships may be put in force.

In reply, I have the honour to inform you that H. M. F. Majesty's Government, taking into consideration this request, will furnish their consular agents with instructions in conformity with the desire manifested by the British Government.

I avail, &c.

T. C. Cobbold, Esq., &c. &c. &c.

(signed) *Joá de Andrade Corvo.*

— No. 9. —

(M. 10,907.)

RUSSIA.

Mr. *W. Doria* to the Earl of *Derby.*

My Lord, St. Petersburgh, 20 July 1875.

WITH reference to your Lordship's Circular Commercial Despatch of the 3rd of February last, addressed to Lord Augustus Loftus on the subject of the prevention of the use of unseaworthy ships, I have the honour to enclose herewith a copy of Baron Jomini's note addressed to me in reply to Lord Augustus Loftus' note of the 18th February last, and also a copy of my answer to his Excellency. Enclosures.

Baron Jomini informs me that the Russian Government will comply with the desire of Her Majesty's Government, and that the necessary steps will be taken to ensure the Russian Consuls resident in England giving the required information to the Board of Trade in each case of a British ship being sold to a Russian subject.

Baron Jomini asks also, in the name of the Imperial Government, that the same obligation may be imposed on British Consuls resident in Russia, and he concludes his note by stating that only Russian subjects have the right to hoist the Russian flag, who ought to certify the fact of the purchase of a vessel before the Imperial Consul, who will deliver a provisional certificate granting permission to hoist the Russian flag, and that all fraudulent sales subject the guilty to punishment by the existing law.

I have, &c.

The Earl of Derby, &c. &c. &c.

(signed) *W. Doria.*

Enclosures in No. 9.

M. le Chargé d'Affaires, St. Pétersbourg, le 2/14 Juillet 1875.

PAR une Note, en date du 6/18 Février, de l'Ambassade de la Reine avait exprimé le désir que les consuls, Russes dans le Royaûme Uni de la Grande Bretagne soient invités à informer le Board of Trade de chaque cas de vente d'un navire Anglais à un sujet Russe.

J'ai l'honneur de vous informer que le Governement Impérial, ne trouvant pas d'obstacle à satisfaire à ce désir, ne manquera pas de faire prendre les dispositions nécessaires à ce sujet.

Le cabinet de St. Pétersbourg aime à espérer que le Gouvernement de le Reine, voudra bien de son côté à titre de réciprocité, faire inviter les consuls Britanniques residant en Russie, d'informer le Départment du Commerce et de Manufacture à St. Pétersbourg de chaque vente d'un navire Russe à un sujet Britannique. Je crois devoir ajouter que d'après les lois en vigueur en Russie, le droit de naviguer sous pavillon Russe appartient exclusivement aux sujets Russes, lesquels, pour obtenir ce droit, doivent présenter l'act d'achat du navire et le faire porter sur les listes des navires d'un des ports Russes. Dans le cas d'achat d'un navire aura lieu dans un port êtranger, il doit être effectué à l'escient du Consul Impérial qui délivre un certificat provisoire pour arborer le pavillon Russe, et que toute vente fictive d'un navire à un sujet Russe rend le coupable passible des lois en vigueur.

Recevez, &c.

A Monsieur Doria. (signé) *Baron Jomini.*

M. le Conseiller Privé Actuel, St. Petersburgh, 3/15 July 1875.

I HAVE had the honour to receive your Excellency's note relative to the desire of Her Majesty's Government that the Consuls of the Imperial Government resident in England should give information to the Board of Trade of the sale of all English vessels to Russian subjects.

While thanking your Excellency for thus acceding to the request of Her Majesty's Government in giving me an affirmative reply, I have the honour to inform your Excellency that I shall without delay forward to the Earl of Derby a copy of your Excellency's note; and I think I may venture to assure your Excellency of the certainty that Her Majesty's Government will not hesitate to accord the reciprocal obligation, and instruct the British Consuls in Russia to give the same information to the Department of Commerce and Manufactures at St. Petersburgh, with reference to the sale to British subjects of vessels belonging to subjects of His Imperial Majesty.

I shall not fail also to direct the Earl of Derby's attention to your Excellency's further remarks on the same subject, that the right to hoist a Russian flag belongs exclusively to Russian subjects; and that a provincial certificate should, therefore, be furnished to them by the Imperial Consul when the purchase of a vessel is effected abroad elsewhere than in Russia.

I avail, &c.

His Excellency Baron Jomini, (signed) *Augustus Loftus.*
&c. &c. &c.

— No. 10. —

(M. 6292.)

SPAIN.

(Translation.)

Señor *A. Castro* to Mr. *Layard.*

Excellency, Palace, 2 April 1875.

I HAVE had the honour to receive the note which your Excellency addressed to me on 24th February last, proposing, by instructions from your Government, and for the purpose of avoiding the grave prejudice caused by the use of unseaworthy vessels, that the Government of His Majesty should instruct the consular agents of the nation, in the United Kingdom, that when any English vessel is about to be transferred to the Spanish flag they should address the Board of Trade, in order that the British Government inspector may first examine her, the consequent expenses being paid by the vessel.

The Government of His Majesty are animated by the same humane feelings as that of Her Britannic Majesty, and they desire to contribute on their side to the diminution of the lamentable number of misfortunes produced by the use of old or worn-out ships; but as the examination of the state of vessels is, according

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to Art. 648 of our Commercial Code, part of the duty of the captain, who, before beginning to load, must, accompanied by the officers of the ship and by two master-carpenters and caulkers, thoroughly examine the vessel, setting forth in the log-book her fitness for navigation, or, if she be not fit, delaying the voyage until the necessary repairs have been made, the Government of His Majesty are of opinion that that inspection offers the guarantees to be wished for, as no one is more interested than the captain in making it scrupulously, for his life and reputation are at stake, and is also liable to the consequent responsibility if he performs that duty imperfectly.

However, if even that were not sufficient, the captain of the port of starting, and abroad, the Spanish consul, can, should the case arise, prohibit the sailing of a vessel not possessing the indispensable qualities.

If consuls could not authorise the purchase of English vessels by subjects of His Majesty, unless the British Government inspector previously declared them to be seaworthy, this formality would very much increase the work of that functionary, and might retard for a long time the making of the purchase contract, and above all restrict the liberty of action of the purchaser, who, as judge of what may suit him, in performing an act of private interest, may examine the state of the vessel by means of a person in whom he places the necessary confidence, and may even knowingly buy her in bad condition, if he wishes to repair her, or break her up, or put her to special uses.

Besides the examination of vessels, if it is to be complete, demands that they should be docked, and placed high and dry, and that operation can only be performed in ports having docks, and would not fail to cause unnecessary delay and expense, for the state of the vessel can be judged by the length of time since her building, or since her last repairs (carena).

I feel confident that these remarks will cause the Government of Her Majesty to appreciate the reasons for which that of His Majesty the King does not think it possible to give the consular agents of Spain in Great Britain the aforesaid instructions, for by doing so they would create an obstacle to the purchase of vessels, of the existence of which in other nations they are not aware.

I avail, &c.

Her Britannic Majesty's Minister Plenipotentiary.

(signed) *A. Castro.*

— No. 11. —

(M. 4328.)

UNITED STATES.

Sir *E. Thornton* to the Earl of *Derby*.

My Lord, Washington, 2 March 1875.

In compliance with the instructions contained in your Lordship's Circular Despatch of this series and of the 3rd ultimo, I have the honour to inform you that I addressed a note to Mr. Fish on the 22nd ultimo, conveying the substance of that Despatch, and now enclose copy of his answer, which I have just received. *Enclosure.*

Mr. Fish states that the American flag cannot be carried unless the ship is duly registered, and that, with rare exceptions, foreign-built vessels are not entitled to registry. He adds that United States consuls are already instructed that no register can be lawfully issued by a consular officer to vessels which are sold and purchased at a foreign port, whether American or foreign built.

Mr. Fish further suggests that should other arrangements be expedient for preventing the use of unseaworthy ships, some reciprocal engagements might be considered in connection with negotiations for a consular treaty.

I have, &c.

The Earl of Derby, &c. &c. &c.

(signed) *Edward Thornton.*

Enclosure in No. 11.

Department of State, Washington,
Sir, 1 March 1875.

I HAVE the honour to acknowledge the receipt of your note of 22nd ult., in which, in compliance with an instruction of the Earl of Derby, you inform me that Her Majesty's Government has under its serious consideration the subject of the prevention of the use of unseaworthy ships; that the Merchant Shipping Acts of 1871 and 1873 were passed with the view to carry into effect the decision come to in the matter; that there is, however, a constant and increasing danger that any law to prevent the use of this class of vessels in the United Kingdom will be evaded as long as such ships can easily be transferred to a foreign flag; that Her Majesty's Government has therefore determined to appeal to the maritime powers to assist it in a matter which is of the greatest importance; and that you are instructed to communicate with this Government, and to propose that the consular officers of the United States in Great Britain should be instructed to communicate with the Board of Trade whenever a British vessel is about to be transferred to the flag of this country, in order that a survey of such vessel may be made by the Government surveyor, any special expense thereby incurred being defrayed by the ship.

The statutes of the United States have not given the privilege of carrying the American flag to any ships except those duly registered or enrolled. It is understood that foreign built vessels (except under circumstances rarely occurring) are not entitled to registry or enrolment, and the consuls of the United States in Great Britain, as well as elsewhere, are already instructed that no register, enrolment, license, or any other marine document prescribed by the laws of the United States, can be lawfully issued by a consular officer to vessels which are sold and purchased at a foreign port, whether such vessels are American or foreign built.

While this Government appreciates the importance of the prevention of the use of unseaworthy ships, the necessity of instructions such as are requested is not apparent.

Should there, however, be reasons, not now presenting themselves, for further instructions, the subject will be considered with interest. But in this case it might require some reciprocal engagements, which perhaps could best be considered in connection with negotiations for a consular treaty.

I have, &c.
Sir Edward Thornton, (signed) *Hamilton Fish.*
&c. &c. &c.

— No. 12. —

(M. 9113.)

COLUMBIA.

Mr. *R. Bunch* to the Earl of *Derby*.

My Lord, Bogotá, 24 April 1875.

IN compliance with the directions contained in Mr. Bourke's Despatch, marked Circular Commercial, of the 3rd of February last, I have communicated to the Government of Columbia the wishes of Her Majesty's Government on the subject of the measures to be taken to prevent the transfer, in the United Kingdom, to foreign flags, of unseaworthy ships.

Señor Sanchez has promised, in reply, that instructions in the sense indicated by your Lordship shall be sent to the consuls of Columbia.

* * * * * * * *

I have, &c.
The Earl of Derby, (signed) *Robert Bunch.*
&c. &c. &c.

— No. 13. —

(M. 9161.)

BRAZILS.

Mr. *Victor Drummond* to the Earl of *Derby*.

My Lord, Rio de Janeiro, 21 May 1875.

With reference to my Despatch, No. 2, of this series, to your Lordship, I have the honour to enclose herewith a copy and translation of a Despatch from the Imperial Minister for Foreign Affairs, stating that he has issued the necessary orders to the Brazilian consular body in Great Britain, to act in conformity with the wishes of Her Majesty's Government, in cases of sales where British vessels are transferred to Brazilian subjects. Enclosure.

I have, &c.

The Earl of Derby, &c. &c. &c. (signed) *Victor A. W. Drummond.*

Enclosure in No. 13.

(Translation.)

Rio deJ aneiro, Ministry of Foreign Affairs, 19 May 1875.

In addition to my note of the 24th of last March, I have the honour to communicate to Mr. V. Drummond, Chargé d'Affaires of Great Britain, that in concordance with the proper department of this empire, I this day gave the necessary orders to our consular functionaries in that country, in order that they may proceed, in conformity with the wishes of the Government of Her Britannic Majesty, in all cases of the sale of vessels where the transfer of such British property is made to Brazilian subjects.

Happy in being able to give Mr. Drummond this satisfactory answer, I avail myself of the opportunity to reiterate to him the assurances of my very distinguished consideration.

(signed) *Visconde de Caravellas.*

V. Drummond, Esq.

— No. 14. —

(M. 7583.)

PERU.

Mr. *Spenser St. John* to the Earl of *Derby*.

My Lord, Lima, 12 April 1875.

I have the honour to acknowledge the receipt of Circular Commercial of 3rd February 1875, and beg to enclose a copy of a Despatch I have received from the Secretary of State for Foreign Affairs, by which your Lordship will perceive that the Peruvian Government accept the proposal of Her Majesty's Government, that no ships shall be transferred in the United Kingdom to the Peruvian flag, unless a certificate of the Board of Trade be produced to their consuls, proving that the ship has been surveyed and found seaworthy. This, though not exactly the course suggested, will probably be equally efficacious. Enclosure.

I have, &c.

The Earl of Derby, &c. &c. &c. (signed) *Spenser St. John.*

Enclosure in No. 14.

(Translation.)

Ministry of Foreign Relations, Lima,
8 April 1875.

As I had the honour to announce to your Excellency, I transmitted on the first convenient occasion to the Minister of Marine, your important Despatch of the 23rd ultimo, in order that he should take into consideration the ideas presented by you, by direction of Her Majesty's Government, on the inconveniences which arose from the employment of ships in a bad state, and the manner by which these might be avoided.

It is agreeable for me now to be able to inform you that the Minister of Marine, in a note of the 6th instant, writes to me as follows:—

"The Government of Peru, duly appreciating the reasons which have induced Her Majesty's Government to pass the laws to prevent the employment of ships which are found to be unseaworthy, will direct all their consuls in Great Britain and Ireland not to grant permission to English ships to take the Peruvian flag, unless they hold a certificate from the Board of Trade certifying that they have been examined and found to be in a state fit to be navigated."

I will communicate this decision by the next packet to the consular agents of the Republic in the United Kingdom.

I avail, &c.
(signed) *A. V. de la Torre.*

— No. 15. —

(M. 9031.)

CHILE.

Mr. *Horace Rumbold* to the Earl of *Derby*.

My Lord, Santiago, 30 April 1875.

With reference to your Lordship's Circular Commercial Despatch, of the 3rd of February last, instructing me to make a communication to the Chilean Government respecting the transfer of unseaworthy ships from the British to a foreign flag, I have the honour to enclose herewith, in copy and translation, the reply of that Government, from which your Lordship will gather that instructions in the sense desired have been furnished to the Chilean Consuls in the United Kingdom.

Enclosure.

I have, &c.
(signed) *Horace Rumbold.*

The Earl of Derby,
&c. &c. &c.

Enclosure in No. 15.

(Translation.)

Sir, 21 April 1875.

The Minister of Marine, for whose information was sent the note of the 7th instant, which you were good enough to address to my honourable predecessor in this department, has found the precautions which your note suggested for preventing unseaworthy ships from changing the British flag for that of this Republic very worthy of acceptation.

In conformity with the opinion of my honourable colleague, I have imparted to the Chilean consuls in the United Kingdom the directions which you will find in the copy which I have the honour to enclose.

Sub-Enclosure.

I avail, &c.
(signed) *J. Alfonso.*

H. Rumbold, Esq.
&c. &c. &c.

Sub-Enclosure.

(Translation.)

Santiago, 20 April 1875.

THE Government of Great Britain having pointed out, by means of their representative in Chile, the necessity of providing some means of preventing owners of unseaworthy British ships from changing the English for the Chilean flag, who evade thus the laws at present in force, or those that may hereafter be passed in the United Kingdom respecting the matter, my Government has not hesitated in accepting the suggestion put forward by that of Her Britannic Majesty, and instructs you therefore that as soon as any person presents himself at your consulate claiming to have acquired possession of a ship carrying the English flag, in order that he may hoist in it the flag of this Republic, you should inform the Board of Trade of this matter, that a survey of that vessel may be made, which the laws of that country prescribe.

Only after having fulfilled this necessary condition, and after having shown in your consulate the proper certificate of the employé, which the Board of Trade above mentioned appoints for the purpose, that the ship which they desire to place under the Chilean flag is clearly seaworthy, can you sanction that which the Articles 86 & 87 of the consular instructions ordain, considering these instructions, inasmuch as they concern Chilean consuls in Great Britain, as an addition to what is prescribed in the said articles.

The special expenses which this survey will occasion are chargeable to the ship which is transferred.

(signed) *J. Alfonso.*

To the Chilean Consuls in Great Britain.

— No. 16. —

(M. 6830.)

ARGENTINE REPUBLIC.

(Translation.)

Señor *Pardo* to Mr. *Sackville West.*

Monsieur le Ministre, Buenos Ayres, 16 March 1875.

IN reply to the note of the 13th instant, in which your Excellency, instructed by the Earl of Derby, makes known the measures indicated by your Government with a view to prevent the employment of unseaworthy ships, I have the honour to inform you that due instructions have this day been promulgated to the Argentine Consular Agents in England, to the intent that, previous to a change of flag in English vessels, the inspection of the latter shall be carried into effect in the form proposed by Her Britannic Majesty's Government.

Having thus complied with the wishes of your Excellency,

I avail, &c.

The Hon. Lionel J. Sackville West, &c. &c. &c. (signed) *Pedro Antonio Pardo.*

— No. 17. —

(M. 8361.)

VENEZUELA.

Mr. *Middleton* to the Earl of *Derby.*

My Lord, Caracas, 6 May 1875.

UPON the receipt of your Lordship's Despatch, marked Circular Commercial, of the 3rd of February last, I addressed the note, of which I have the honour to enclose a copy, to Señor Blanco, to which his Excellency returned the answer

Enclosures.

I have also the honour to enclose, in copy and translation, and in which he states that his Excellency the President of this Republic, sees no motive for declining to accede to your Lordship's proposition that, with the view of preventing the use of unseaworthy ships, the consular officers of Venezuela in the United Kingdom be instructed to communicate with the Board of Trade whenever a British vessel is about to be transferred to the Venezuelan flag, for the purpose of her being subjected to a survey.

At the same time, however, Señor Blanco states that his Excellency the President of Venezuela considers that, in a spirit of reciprocity, Her Majesty's Government should be pleased to inform its agents, that no Venezuelan ship can change its flag for that of Great Britain without the previous knowledge of the Minister of Finance, in order to prevent a national ship from succeeding in escaping out of Venezuelan waters after violating the laws of the country, and freeing itself from the corresponding penalty by assuming the flag of another nation; thus producing offensive discussions.

In communicating this proposal of his Excellency General Guzman Blanco to me, by order of his Excellency, and for transmission to Her Majesty's Government, Señor Blanco expresses the hope that it may obtain a favourable reception.

I have, &c.

The Earl of Derby, &c. &c. &c.

(signed) *R. T. C. Middleton.*

Enclosures in No. 17.

Monsieur le Ministre, Caracas, 9 March 1875.

THE serious attention of Her Majesty's Government has been turned to the subject of the prevention of the use of unseaworthy ships, and the Merchant Shipping Acts of 1871 and 1873 were passed with the view to carry into effect the decision come to in the matter. There is, however, a constant and increasing danger that any law to prevent the use of this class of vessels in the United Kingdom will be evaded as long as such ships can easily be transferred to a foreign flag. Her Majesty's Government have therefore determined to appeal to maritime powers to assist them in a matter which is of the greatest importance for the safety of life and property, no less than for the credit of the mercantile navy of different states.

I have accordingly the honour to inform your Excellency that I have received the instructions of the Earl of Derby, &c., to propose to the Government of Venezuela that their consular officers in the United Kingdom should be instructed to communicate with the Board of Trade whenever a British vessel is about to be transferred to the Venezuelan flag, in order that a survey of such vessel may be made by the Government surveyor, any special expense thereby incurred being defrayed by the ship.

The Earl of Derby trusts that the course of action which I have had the honour of suggesting to your Excellency will meet with the concurrence of the Venezuelan Government, and that they will find no difficulty in furnishing to their consular officers in Great Britain instructions to the effect referred to.

I avail, &c.

Señor Jesus Maria Blanco, Minister of Foreign Relations, &c. &c. &c.

(signed) *R. T. C. Middleton.*

(Translation.)

Caracas, 4 May 1875.

I INFORMED his Excellency, the President of the Republic, of the note dated the 9th of March last, in which your Excellency is pleased to propose that the Government of the Republic should give instructions to its consular agents in the United Kingdom, that when a British vessel transfers its flag to that of Venezuela, to participate it to the Board of Trade, with the object of having the ship examined by the respective functionary, and thus to impede the use of vessels in bad condition, to which the serious attention of Her Majesty's Government has been directed.

His Excellency the President, attending to the motives expressed in the note cited, has no difficulty in agreeing to dictate the measures that your Excellency is pleased to propose, but he believes that in a spirit of reciprocity, the Government of Her Majesty will deign also to instruct its agents that no Venezuelan ship can change its flag for a British one, without the previous knowledge of the Minister of Finance, in order to avoid that a national vessel that evades the Venezuelan waters after violating the laws of the country seeks to free itself from the corresponding penalty by taking the flag of another nation,

nation, which fraudulent process gives rise to annoying discussions. In consequence I have received orders from his Excellency, to propose to the Government of Her Majesty, through the worthy medium of your Excellency, the indicated measure which I hope will merit a favourable acceptance.

I have, &c.
(signed) *Jesus Maria Blanco.*

To His Excellency R. T. C. Middleton,
Minister Resident of Great Britain.

— No. 18. —

(M. 10,288.)

COSTA RICA.

Señor *Peralta* to the Earl of *Derby.*

Costa-Rican Legation, London,
8 July 1875.

My Lord,

I HAVE the honour of informing your Excellency that the Government of the Republic of Costa Rica has given orders to this Legation, and to its Consulates in the United Kingdom, that whenever it is intended to transfer a vessel to the Costa-Rican flag, previous notice shall be given to the Board of Trade of Her Majesty's Government, so that the vessel may be duly examined by the proper inspector, and the sailing of ships in bad condition be prevented.

I have the pleasure and honour of stating to your Excellency, that both by this Legation, and by the Consulates of Costa Rica in this country, due notice will be given to the Board of Trade whenever the said transfer of flag is about to take place, so that the laudable and philanthropic intentions of Her Majesty the Queen may be fulfilled.

I have, &c.
(signed) *Manuel M. Peralta.*

The Earl of Derby,
&c. &c. &c.

UNSEAWORTHY SHIPS (TRANSFERS).

COPY of CIRCULAR DESPATCH addressed by the Foreign Office to Her Majesty's Representatives in Maritime Countries, relative to the question of the TRANSFER of alleged UNSEAWORTHY SHIPS to a FOREIGN FLAG, together with the REPLIES thereto.

(*Mr. Cavendish Bentinck.*)

Ordered, by The House of Commons, *to be Printed,*
7 *April* 1875.

Under 2 *oz.*